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The Public Health Journal of Canada

INCORPORATING THE CANADIAN THERAPEUTIST AND SANITARY ENGINEER

Vol. 1 59 John Street TORONTO, CANADA No. 10

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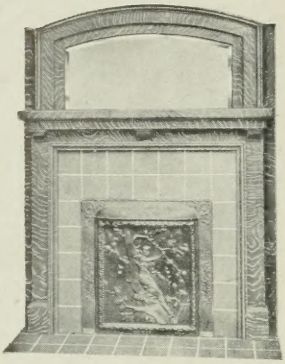

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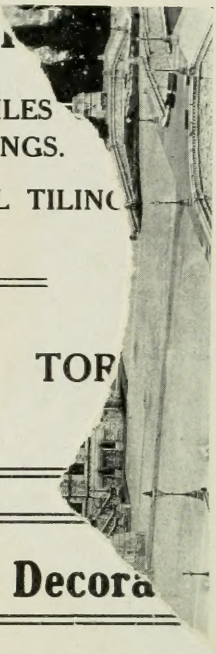

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INCORPORATING THE CANADIAN THERAPEUTIST AND SANITARY ENGINEER

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Special Articles

MAINTENANCE OF PUBLIC HEALTH

And its Improvement.

By P. H. BRYCE, M.A., M.D.

PART I.*

To comprehend adequately the meaning of all that is implied in the term "National Health," it will be necessary to realize that, while the nation's health is primarily measured by the number of deaths in any given population, yet, from a national standpoint, it may further be understood as indicating the maintenance of the largest possible number of effective citizens, viewed from the standpoint of their economic value to the state. Thus, a nomad population in a temperate upland, living in simple fashion with its flocks and herds, may, under such conditions of life, naturally maintain a very high degree of individual health, and yet, from an economic standpoint, be but little comparable in social effectiveness with a busy industrial urban population living under sanitary conditions which have been rendered so good through present-day scientific knowledge as to be compatible with the highest individual health.

It is therefore apparent that one must clearly distinguish, as Prof. W. Z Ripley phrases it, " between the physical environment, which is determined independently of man's will, and that social environment which he unconsciously makes himself and which, in time, acts and reacts upon him and his successors in unexpected ways."

This is well illustrated in his "The American Commonwealth," by the Hon. James Bryce, the British Ambassador to the United States, who says:—"The very multiplication of the means at his (man's) disposal for profiting by what nature supplies, brings him into ever and more

*In two parts. Part II. will appear in next issue.

complex relations with her. The variety of her resources, differing in different regions, prescribes the kind of industry for which each spot is fitted; and the competition of nations, always growing keener, forces each to maintain itself in the struggle by using to the utmost every facility for the production or for the transportation of products."

Accepting these several dicta as expressing the generally accepted philosophic thought of to-day, we shall find that behind them lies the conception expressed by Dr. James A. Lindsey, M.A., of Belfast, in a paper on "Darwinism and Medicine": "That the organic world is the scene of an incessant struggle, of a keen, vital, competition in which the fittest survive—that is, the fittest for the environment—in their capacity to obtain food, resist their enemies and propagate their kind, while the unfit perish, has been recognized as the fundamental law of life."

As Weismann says, this principle has become the basis of the science of life; it "has conquered the world and has become so inwrought in the texture of our thought that it is now practically impossible to think of any biological problem except in terms of evolution."

We can, therefore, clearly see that "The process of life is, as we begin directly to distinguish, a process of development which is, beyond all doubt, overlaid with a meaning that no school of scientific thought in the past has enunciated."*

The consideration of our subject naturally leads us to enquire what are the problems which a people have to consider as affecting their national health. Our people inhabit the northern half of a continent extending from the 42nd parallel to the pole, whose eastern rocky coasts are washed by the waters of the polar current; whose western shores are laved by the temperate waters of a warm ocean stream; whose western portion, with its warm valleys, is ribbed with mountain chains having their slopes dipping eastward to the boundless plains of the interior, which, again, reach to the forested areas of low-lying rocky range, extending for thousands of miles. Such areas supply every condition for the development of the great basic industries of civilization. In adapting themselves to all these varied conditions of climate and occupation, Canadians, at the same time, have to devise means of preserving their health.

Not until the value of population as a national asset is fully comprehended will any people be prepared to exercise systematically, as individuals or as a community, those precautions necessary either to maintain or to improve its health to the highest degree possible under its particular environment. To-day France is struggling with a practically stationary population, and finds it necessary to go to its Algerian provinces to recruit its army; while its ancient rival, Germany, sees her population increased from 38,000,000 in 1871, to 68,000,000 in 1908, and her industrial population from 15,000,000 to 40,000,000. In the latter country, so vital to national greatness is population deemed, that the Kaiser has agreed to educate the eighth son of every family in Germany.

To illustrate the fact by a more familiar example, Ontario, which increased its population from 450,000 in 1841, to 1,396,000 in 1861, with an increase of revenue from about $700,000 to about $3,500,000, grew but slowly from 1871 to 1900, having an increase in population of only 563,293, the total births being

*Benjamin Kidd, "Western Civilization."

1,200,000. For all Canada, the population in the several census periods was:—

1871	3,485,761
1891	4,833,239
1901	5,371,315
1906	6,320,000

The intimate relation between population and progress is seen in the trade returns:—

	EXPORTS	IMPORTS
1870	$84,214,000	$55,181,000
1906	283,282,000	231,483,000

It is interesting to supplement these figures by those for the same periods in the United States:—

POPULATION	TRADE RETURNS
1871—38,558,3	Imports—$435,958,408 Exports— 392,771,768
1890—62,622,250	Imports—$789,310,409 Exports— 857,828,684
1906—84,154,009	Imports-$1,226,562,000 Exports—1,743,864,000

But the most remarkable illustration of the relation between national prosperity and a sturdy and industrious population is seen in that area called the twelve north-central states. The population was, in 1870, 12,981,111; in 1900, 26,233,006; while the value of farms and farm improvements increased from $3,451,000,000 in 1870, to $9,563,000,000 in 1900. The population, which was made up of 60 per cent. foreign born or the children of foreign born, produced more than 50 per cent. of the total agricultural wealth of the United States in 1900, and had in all the twelve states a death rate lower by three in 1,000 than for all the United States.

While immigration is thus shown to be a most potent factor in national development, it is yet more important, as illustrated by German statistics, that the native-born population shall have a normal increase both by a high birth rate, and the preservation of the infants born. Assuming a natural annual increase of 15 per 1,000, within fifteen years over one-third is added to any normal population. Further, it is apparent that, within fifteen years from birth, some 35 per cent. of such a population would move into the class of at least partial producers and, were the nation's existence at stake, into the ranks of her defenders. But it is further apparent that the preservation of the lives of the workers in the periods beyond fifteen years, and of the mothers of the nation, who go to recruit the population, is equally a part of the programme of conserving the national wealth and resources. In a word, it is apparent that we must attempt what H. C. Patten, M.A., M.H.O., Norwich, England, in a recent article has called "The State Standardization of our National Life." He says: "We say implicitly that it is to the national interest and vital to our social welfare that every child shall receive a minimum amount of education. * * * In all sobriety and earnestness we must think out for ourselves and endeavor to make others realize what are the essentials of a healthy communal existence, what standards in feeding, in housing, in medical assistance, in education, in physical training, in recreation, we are prepared to advise."

Dr. George Newman, Chief Medical Officer of the Board of Education, England, has said that it is "evident that the problem of disease and physical unfitness from infancy to the end of school life is, broadly speaking, one and the same; and that the conditions and circumstances, whatever they may be, which produce a high mortality rate, are also exerting an injurious influence on the childhood of the state much beyond the age of infancy."

To understand the full importance of the statement the following table is given:

DEATHS PER 1,000 FROM ALL CAUSES.

	under 1 year	1-5 y'rs	5-10 y'rs	10-16 y'rs	Total ages 1-15
Mortality in England and Wales, 1907	117-62	17-58	3-37	1-97	15-00
Mortality in Ontario, census, 1900	132-00	14-5	3-3	2-3	16-30

The figures regarding infant mortality should be considered in conjunction with the facts that the average death rate in 1901-7 for the United Kingdom was 161 per 1,000, while that for Ontario in 1902 was 126. What Canada loses or gains may be seen in the figures for 1900. A somewhat greater death rate is seen in Germany, where, of 2,000,000 births annually, some 400,000—or 20 per cent.—die within the first year of life.

Figures comparable to the foregoing are given in the Mortality Bulletin for 1908 of the United States census. According to it, almost one-fifth of all the deaths were of infants under one year, and over one-quarter of the deaths were of children under five years, or there were (estimated) 273,000 deaths of infants under one year and some 400,000 under five years.

Regarding the death rate in England, Newman points out that 30 per cent. of the mortality under one year of age occurs during the first month, and that the mortality is one-third higher in urban than in rural districts.

The Registrar-general classifies the causes as (1) common infectious diseases; (2) diarrhoeal diseases; (3) wasting diseases; (4) tubercular diseases; (5) other causes. It is worthy of notice that while the deaths under one year have not, in England, shown any notable decline, those between one and five years have, since 1860, shown a decline of 40 per cent., due in large measure to the municipal control of contagious diseases.

The meaning of these figures from the standpoint of economic loss will be understood when it is seen that, in the population of England and Wales, which is approximately 40,000,000, there are lost to the nation during the first two years of life, 150,000 children; while a very large number, although escaping death, have the seeds of disease. This may be seen in the results of the examination of school children under the new English Act requiring the medical inspection of all school children. Thus, in an examination of 459 school children in a single suburban London district, Dr. George Carpenter, of the Queen's Hospital for Children, found that of 459 presumably healthy children—249 boys and 210 girls between three and seven and ten to fifteen years of age—234 had weak ankles or flat feet, 200 had rickety deformities, 367 had decayed teeth (1,514 decayed teeth in all), 119 had enlarged tonsils, 129 had adenoids, 21 were deaf from catarrh, 9 had discharging ears, 181 had deep cervical glands enlarged, 177 the submaxillary glands enlarged, 337 the superficial cervical, 252 had inguinal glands enlarged, 81 had hernia.

If it is assumed that the population of Canada, while in many respects better born, better fed and better clothed than that of England, has, owing to less generally developed and more imperfectly executed sanitary laws in a more severe climate, an equally high mortality as that of England, it is apparent that there will be an annual loss of 26,250 lives during the first two years of life. Actually, in 1901 the loss to Canada was 81,201, or in a population of 7,000,000 would have been over 100,000. If of the total children born in English, American or Canadian cities, some 8 per cent. die within the first month from birth, then it is apparent that there must exist conditions as regards either (a) the health of the

mother or (b) the post-natal environment of the children, whether poor nursing or lack of clothing or of fresh air, which are accountable for such a serious mortality. In England and in many European and American industrial centres, it is not an infrequent thing for mothers of very young children to go to the factory, leaving the baby to be cared for at a crèche or nursery kept by one of their own class. As there is almost inevitably overcrowding, foul air, neglect and artificial feeding, it is not difficult to understand the cause of the high mortality. There is, as yet, but little of this practice in Canada, but in certain large cities the practice has begun. So common is the practice in England that systematized attempts to cope with it are being made. This is being done in the "Infant Depots" of Sheffield, which were established with the idea of actually teaching mothers the rules of good nutrition. They thereby tend to prevent, lessen and cure chronic gastro-intestinal disorders and to raise the general standard of the health of infants. This scheme, probably the most important of any public health measure for saving infant life, in order to be successful, demands an efficient staff of trained workers and health visitors to encourage, advise and gain the confidence of mothers by visiting their homes in a friendly manner rather than as officers of an inquisitorial or police surveillance.

The milk depot is to educate mothers how to prepare properly infants' artificial food. Dr. A. E. Naish, M.A., Sheffield Royal Hospital, says "that apart from the direct benefits, which he shows are abundant in the gain of health and weight of children, this women's school for babies has succeeded in raising a spirit of emulation amongst mothers which it would be hard to reach in any other way." It need hardly be pointed out that the school will extend its lessons to show the necessity of the better care which a mother should take of her own health. From the standpoint of conserving the lives of the future workers it supplies the most logical and potent agency yet developed in public health work. What it means will be understood when it is pointed out that if 25 per cent. of the deaths of children under one year in England could be prevented it would mean 30,000 lives saved annually and at the same death rate, some 7,000 in Canada. The marvel is that almost nowhere has a civilized community hitherto organized in any country any official department intended systematically to save the lives of infants.

An organized, if unofficial work, which is essentially preventive is that of the social workers of different hospitals, especially illustrated by that of the Massachusetts General Hospital, where there is a regular staff of eight trained social workers with a number of volunteers. It was found that the hospital and dispensary patients treated needed more than medical treatment. Many have no funds to buy even the medicine required. Hence the hospital workers come in touch with many most varied charitable agencies, and their work becomes both preventive and curative.

How directly associated with this work is the municipal control of the milk supplied to children will be shown later in dealing with the question of public milk supplies. The work of the Nathan Strauss laboratories in New York City in supplying pasteurized milk at a minimum cost, especially during the summer, has been shown to have been the direct means of saving hundreds of babies. To illustrate only one point, viz., the importance of the care of the food of babies, statistics are given to show that in some German cities (and similar conditions

prevail elsewhere) the cause of deaths of children is due to diarrhoeal diseases to the extent of from 36 to 54 per cent. These are caused by milk through the bacteria of fermentation, for it has been pointed out that 51 per cent. of artificially fed infants have died, and only 8 per cent. of the breast fed; while in France, of the 20,000 infants who died, four-fifths were bottle fed. As applied to the preservation of the lives of the 175,000 children born annually in Canada, the importance of the fact will be fully appreciated when it is further realized that at Heidelberg, in Germany, some 40 per cent. of all cows slaughtered have been found to be tuberculous. It will be understood how the inoculation with this disease, whose effects increasingly appear in later years, may be conveyed through the milk of cows. How potent a factor, even in the case of children, this becomes is seen from the fact that a statistical analysis of the deaths in a single English county (Dr. H. W. Taxford, M. O. H., Holland Parish Council) shows that 8 per cent. of the total deaths in the first four years of life were registered as due to tuberculosis, and 9 per cent. to disorders of nutrition, most of which were probably tubercular. The other infectious diseases in this country caused 14 per cent. of the total mortality and included 7 per cent. due to measles, 3 per cent. due to whooping cough, 0.9 per cent due to scarlatina, and 5 per cent. due to diphtheria, while 1.7 per cent. were due to diseases of the respiratory system, such as bronchitis and pneumonia. In all, the deaths amounted to 7 per 1,000 of the total population.

It is of the utmost importance to realize that from 20 per cent. to 25 per cent. of the total infectious deaths from 0 to 4 years inclusive, in England and in Canada, too, are due to whooping cough and measles alone, both of which, in a special manner, give the bacillus of tuberculosis, if present, its opportunity of becoming the cause of a general infection.

As the death rates in this case were clearly comparable to those in Canada, it will be seen that the percentage of the population from 0 to 4 years is almost 25 per cent. of any total population. The reduction of the deaths even 5 per cent. in a population of 7,000,000 would, in five years, add 30,000 native born children to the population. That such is possible may be inferred from the fact that in Ontario, from 1882 to 1902, with an increasing population, the deaths from the acute contagious diseases fell from 4,670 to 1,768.

What prevention in the case of a single disease may mean is illustrated by the decrease in deaths from diphtheria. Thus, there were 4,541 deaths in 1881 in Canada from this disease; 3,536 in 1891; 1,982 in 1901; while the population had increased some 33 per cent. in 1901 as compared with 1881.

In any ordinary population about one-seventh die within the school ages of from 5 to 15 years. The notable reduction in deaths due to the contagious diseases of childhood has been already noted; and in no department has more public health progress been made, both in Europe and America, than in school sanitation. The progress of this branch has, within the past ten years, been extremely satisfactory, and has been measured by the extent to which the medical inspection of schools has been systematically adopted in our great centres of population. By the Act of 1907, medical school inspection was made compulsory throughout England and Wales, while it has been operative in Boston, New York and Chicago for from ten to fifteen years.

In Canada it is only just beginning. Its first positive benefit is illustrated in the

early discovery of initial and mild cases of the acute contagious diseases. The value of the work may be judged from the fact that, under old time methods when no school inspection existed, out of 17,704 cases of scarlet fever in London, England:—

5,279 cases were under five years; 6,729 cases, from five to nine years; 3,817 cases, from ten to fourteen years; or but 29 per cent. were under five years. In a similar outbreak in Toronto in 1897, 70 per cent. of the total cases were in school children, though the ratio of population for the two periods is 11 under five years to six over that age.

What prompt and effective work in dealing with outbreaks amongst children means cannot be better illustrated than by a single instance which occurred in the city of Ottawa in 1903. For years Ottawa had an unenviable notoriety in the matter of contagious diseases. In 1902 there were in all, 609 cases of scarlet fever and 234 of diphtheria. In February, 1903, a new, well-equipped isolation hospital was opened, and after March all cases of these diseases were sent to the hospital. During the first three months of the year 161 cases of the two diseases occurred, and but 159 in the succeeding nine months, or, compared with nine months in 1902, there was an actual reduction of 75 per cent. in cases and a reduction in deaths of 85 per cent. in scarlatina and 54 per cent. in diphtheria.

Begun in New York in 1897, medical school inspection had been extended in 1906, to 5,007,244 examinations of school children, who were inspected in 88,813 school visits by trained physicians. The work is carried on by a staff consisting of the chief medical inspector and 200 medical assistants, together with a supervising nurse and a corps of trained nurses. All case of suspected contagious diseases are at once excluded, 12,895 being excluded in 1906. Each medical inspector is assigned to a group of schools, which he visits daily by 10 o'clock and examines in a separate room (a) all children reported by teachers as appearing unwell; (b) all children who have been absent; (c) all returning after having been excluded; (d) all referred by the nurse for diagnosis. A routine physical examination is made of each child sent in, and a complete record of each is kept. The inspector gets lists of absentees, and these are visited in their homes. The nurses report each morning at each school at a specified time in order to treat the minor contagious cases which were ordered to report to them. They make weekly visits to the schoolrooms to make a routine examination of the eyelids, hair, skin and throat of each pupil. The department maintains a hospital and two dispensaries. The total number of complete physical examinations made in 1906 was 78,401. Of these, 37,000 suffered from diseased glands, 17,928 from defective vision, and 56,259 required treatment of some kind. It is at once apparent that it is the diseases of nutrition, especially those indicating tubercular infection of some part of the body, which form at least two-thirds of the total cases.

The work of prevention has been promoted in London, Boston, Germany and elsewhere by having delicate, crippled and mentally dull children brought together in special schools. This work of prevention, especially in England, has been extended to the feeding of school children in the poorer districts. It has, moreover, been found by medical inspectors of schools in one or two Canadian cities that, even here, in not a few cases, where fathers leave home early and mothers go out to work, the school child-

ren are often but poorly fed and nourished.

In a report by Dr. R. Crowley, school medical officer, Bradford, England, for 1908, it is pointed out that from 1,500 to 2,665 dinners were given monthly, and in the last three months of the year, from 1,500 to 1,900 breakfasts were likewise given. Schoolrooms of churches or other convenient places, sometimes the school premises, were utilized and meals given at a cost, including all administration expense, of 1.88d. per meal.

Giving the mid-day meal is of great educational value, teaching cleanliness of the hands and person generally, and demonstrating the great need of giving individual attention to poor children. When it is fully realized that the school is the first place where the state, under ordinary circumstances, comes into official contact with the individuals of a community and that, for some time, it largely undertakes the control of the life of the future worker or producer in some branch of industry, it is of the utmost importance that this control should be of the most perfect character, viewed from the physical standpoint. There is probably not more than one child in three who, in some particular, does not require education in physical culture to correct either inherited defects or those acquired in the home or school environment on account of bad lighting, foul air and bad seating. The first daily lesson in every school should be a graded one in physical culture, either as calisthenics or gymnastics. All the benefits of a trained militia can be had without more than nominal cost if we would utilize all our regular militia as drill instructors. It would be of the greatest benefit, both to the health of the pupil and to the discipline of the school. How slowly such reforms in methods have come is seen in the fact that, as long ago as 1859, Sir Edwin Chadwick, the father of state medicine in England, pointed out, before the Social Science Congress, that not only could 40 school boys be trained in physical and military drill for the same cost that it took to make one recruit into a soldier, but further, that it was a training of the physical frame at an age when it was readily influenced before the bony parts were set, and when the mind was responsive to teaching which became a permanent part of the boy's make-up.

THE SCHOOL CLINIC

By L. HADEN GUEST, M.D.

In describing the suggested organization of the school clinic, I am relying on my experience at the St. George's Dispensary in Blackfriars, London, where for some time past the medical staff have been experimenting in the direction of the school clinic. The patients at this dispensary are women, school children, and infants, the dispensary is free to those too poor to pay for medical advice, and some 6,000 patients, a large number of whom are school children, are seen every year. This figure probably represents the full number of patients who can be seen in the space available and during the time the physicians are in attendance.

Judging from this experience and that of others who have been pioneering on school clinic lines, one gets a very actual view of the conditions to be met.

In every closely-populated locality schools are built fairly close to each other, and fall into groups. To serve a group of schools only one school clinic is required, and in a thickly-populated neighborhood one clinic may very well serve for sixteen or twenty schools, with a school population of something under a thousand each.

In order to start a school clinic all that is needed is to find some convenient building situated in the centre of the group, or as near this as may be. It is desirable, especially for small children, to have the clinic not more than twenty minutes' walk from any school. Greater distances are inconvenient, and much smaller distances highly desirable. The St. George's Dispensary is established in an old public-house less than ten minutes' walk from nearly a dozen schools.

The chief needs of a clinic premises are a large waiting-room, one or two rooms for consultation with the physician and a room for treatments and dressing by the nurse.

A physician should be in attendance at the clinic during school hours in the morning, and the head teachers of the schools served by the clinic should send to the clinic, in charge of the school nurse or other responsible person, all the children who are to have treatment. These children will be roughly the poverty group cases, but they will also include cases of discharging ears and other chronic ailments that need daily care, and which cannot be attended to at a hospital. The children sent to the clinic would be normally those examined by the school doctor, whose parents were recommended to get them treatment, but who failed to obtain it, on their own initiative, after a reasonable period, say a month. In some acute and urgent cases the clinic should render first aid, as it were, pending other arrangements, and the teachers should be encouraged to consult the physician and send children to the clinic for examination in every case where there was uncertainty as to their condition.

When a medical inspection of a school is made the defects discovered fall into very definite classes. Among them some children, for instance, will have defects of vision, some obstruction at the back of the nose caused by adenoids, some have discharging ears, and others threatening or incipient phthisis. Which of these ailments can the school clinic properly treat? Partly this must depend upon the situation of the clinic. If it is near to a good special hospital for

eye diseases or for those of nose, throat, or any other special ailments, and if satisfactory arrangements can be made for treatment at that hospital, then it is a waste of energy to multiply treatment centres. But the clinic should always reserve to itself the power to treat any kind of case in the event of any child for special reasons failing to go to the special hospital. This does not mean that a recalcitrant eye case should be treated at the clinic, but that the child not getting treatment should be sent to the clinic and arrangements made, through the clinic organization, for the special treatment needed. All that is wanted often, in cases where parents refuse or fail to get the suggested treatment, is a medical talk with the parents giving them information or reassuring them about some not understood medical mystery.

This hypothetical eye case gives the key to the line of treatment which the clinic should adopt. The clinic should be the organization which sees that the child gets treatment. A large number of cases, those of diseases of ear, nose, and throat, many skin diseases, chest troubles, digestive troubles and others, would be actually treated at the clinic. But the very severe ear case would be sent to hospital, the serious phthisis case to the sanatorium, and the serious bone tuberculosis case to the special hospital. The clinic, in fact while acting as a treatment centre for those defects and diseases which can be conveniently and economically treated in an institution fitted up in a simple and inexpensive way, would also act as a sorting centre, and draft off serious and special cases to the institution where their appropriate treatment could be obtained.

The school clinic should work in the closest co-operation with the hospitals and dispensaries, and should have standing arrangements with them whereby certain classes of cases could be sent direct to hospital from the clinic. Some of the arrangements made at present with hospitals for treatment would fit in well. This means in practice that the clinics would only need the simplest apparatus, and that for the complex cases the costly and elaborate hospital organization would be made use of.

The school clinic established in this way in a convenient building in the centre of a group of schools would very rapidly take its place as a part of the school organization. If we reckon £100 a year for rent and taxes, £90 for the nurse, and £300 each for the two doctors (this being at County Council rate), a further £100 a year for drugs and dressings, £80 for caretaker and porter, and £50 for upkeep and renewals,, we have a school clinic capable of dealing with something over 6,000 cases a year for just over £1,000 or $5,000, a year. I have not attempted to estimate the preliminary cost of furnishing and fitting up, but if done on simple lines this certainly need not exceed a couple of hundred pounds, including all medical instruments and diagnostic appliances.

Part of the reason for the establishment of school clinics lies in the fact that without them the large poverty group of ailing children cannot be adequately treated, because their parents have not time to, or cannot, or will not, take their children to private physicians or hospitals. Nevertheless, a clinic may look forward to frequent visits from the parents, and every possible endeavor should be made to get the parents to attend. There are very few of even the most demoralized slum dwellers who do not wish to do what they can for the good of their children. But when not only means, but all knowledge is lacking, it is idle to ex-

pect the observance of hygienic common sense. Many parents who cannot afford to wait for a whole morning or afternoon, or even the larger part of a day at a hospital, could manage to get to the clinic if a definite hour was fixed.

The clinic should, in fact, become the instruction centre for parents in the art of hygiene, the concrete examples being provided by their own children's ailments. Such concrete hygiene teaching, supplemented, perhaps, by special demonstrations and talks for parents—on the care of the teeth, on breathing and on feeding, for instance—would do more for slum districts and poverty spots than years of abstract lectures in evening schools, admirable as these are.

Above all, the clinic must be simple, straightforward and human. A laughing and a smiling child should be the rule. A solemn or a weeping child the exception. The physicians' and nurses' rooms should be places of happiness and kindliness. In this way the confidence of child and parent will be gained easily, treatments will be facilitated, and the parents will try to obey and understand the rules of treatment and hygiene. In my own experience I have met very few people incapable of following simple hygienic and medical instructions.

THE LIP METHOD OF DRINKING

And its Practicabilities.

By WILLIAM J. MANNING., M.D.

It is here intended to point out the hygienic value, practicability, and thoroughness of the lip method of drinking and its feasibility and utility as applied to training school children in the public schools.

The ordinary method of drinking is to expose the inner side of the lower lip, which is covered by a very thin, highly vascular mucous membrane, against the side of any drinking utensil, thus wiping the glass, or receiving upon its surface any infectious or insanitary material placed thereon by previous dirty mouths, or by other agencies, coming in contact with the cup.

By drawing in the lower lip so that the glass or cup rests upon the outer skin or epidemis, only the fluid within the drinking utensil is brought in contact with the mucous membrane of the mouth or the tongue.

School children, if instructed in this procedure by their teachers two or three times during the school year, will form a habit that will be carried by them all through their respective lives, and thus utilize it at all times in a consistent manner, whether it is at some fashionable five o'clock tea, or in a steam railway car, or depot, or their own homes, as compared with individual cups and sanitary bubble drinking fountains, which cannot be consistently used upon all occasions, owing to their inconvenience. In other words, the person carries the virtues of the individual cup and sanitary drinking fountain with him at all times.

The protective function of the skin forms an effective bulwark, or barrier, through which no germs, pathogenic or disease-forming in character, may pass (Macfarland's text-book of bacteriology, and chapter on the immunity of the skin

on the human body to bacterial invasion) equally as well as the harmless variety.

A few persons practice this simple method (Dr. Pynchon, of Chicago, has insisted, in his printed instructions, that this method be practised by his patients as a means of minimizing the danger of diseases of the mouth, throat and respiratory organs), almost unconsciously at the present time, but it is with the idea in view of making it more universal in its operation among school children, with an explanation by teachers as to why it is efficient, that has been the object of this short paper, and further as a means of combating tuberculosis.

INFANTILE PARALYSIS

By H. W. FRAUENTHAL, M.D.,
of the Hospital for Deformities and Joint Diseases, New York.

The causes of infantile paralysis are so obscure that no one can rightfully claim that he knows them. The study of a very large number of cases has convinced me that it is due to a very virulent and active poison generated in the intestinal canal, which filtrates into the spinal cord and there brings about paralysis, and sometimes death.

It is of primary importance that children should have the best possible food, in a sanitary condition. The fact that infantile paralysis is a warm-weather disease points directly to the fact that it is due to some chemical changes in foods, brought about by the weather and acting as poisons upon the child-system.

The symptoms, such as fever, vomiting, pain in the bowels and diarrhoea, are well known, and the careful physician, noting these symptoms, examines at once for paralysis and treats the case accordingly.

We may rest assured from clinical deductions alone that there is hyperemia—abnormal accumulation of blood—of the spinal cord, which has the effect of inhibiting temporarily or actually destroying certain ganglion cells in the anterior horns, or front part of the spinal cord. These cells have nutritive as well as motor function, and any injury to them gives rise not only to certain paralysis, but to impeded circulation and arrest of growth.

High frequency currents used along the spinal column to contract the vessels in the cord and overcome congestion and compression of the nerve cells, should be administereed after the paroxysm. No drugs, adrenalin, ergot, etc., can do this as efficiently as the high frequency electric current.

To prevent the muscle fibre from atrophying, while resolution in the cord is taking place, the sinusoidal current is most efficient; hand and mechanical massage will assist in preventing wasting.

The daily treatment should consist of sinusoidal electricity and high frequency for five minutes, to the point of tolerance, followed by a uniform interrupted galvanic current, having immersed the sponges in a ten per cent. solution of strychnine nitrate. The galvanic interrupted current should be given for about seven minutes. In the application of the electric current it is very important that the origin and insertion of the affected muscles treated should be as closely

approximated as possible to obtain the best effect.

Most of the massage treatment given to affected children consists of rubbing the skin or moving the skin on the underlying fascia. To obtian the result desired and do the most efficient work, we grasp between the thumb and first finger all the tissue between the skin and bone, and by a process of pressing and milking, going from the extremity toward the body, the veins and lymphatics are emptied and elimination and assimilation improved. Deep kneading and striking with the back of the first phalanx aid to pro duce hyperemia. Vibration properly given is a good substitute for massage. By such an application of thorough massage the temperature of the skin is raised from one to three degrees.

Before retiring the alternate application of hot and cold water improves the vitality of the affected limb.

In children over three years great benefit is derived from a systematic rhythmic drill gefore a mirror or by going through a series of movements which compel the child to concentrate its attention on the physical effort.

The child is made to contract and relax the muscles involved, or if there is an inability to do this muscular effort, the nurse aids the child to go through each movement slowly, but keeps his attention concentrated on the effort.

One of the prevailing errors of the present treatment of infantile paralysis is the locking up the limb in plaster boots, etc., which simply increases the atrophy (or wasting) of the affected muscles.

The application of braces should be made to aid locomotion and prevent deformity.

ARTIFICIALLY RAISED BABIES

By S. JOSEPHINE BAKER, M.D.
Chief of Child Hygiene, New York, Dept. of Health.

The good old-fashioned "mothering" of children is forming an important factor in the fight which the Department of Health of New York City is making for the lives of New York's babies. In the institutions for the care of babies nothing is left undone to protect the lives of the foundlings, orphans or otherwise dependent children placed there. They get everything but the "mothering," which even the best and most earnest board of directors cannot buy for them. In the Nineteenth Ward you will find the largest and most modernly equipped institutions for the care of babies. Yet in that ward 187 babies have died since the beginning of June.

The managers of institutions of this kind realize how necessary good, old-fashioned "mothering" is to the infants committed to their care, and that is why they try to obtain homes outside the institution for nursing babies and, if possible, a wet nurse in the foster home.

The very best of modern appliances, the finest sanitary surroundings, the most perfectly prepared bottle food cannot take the place of individual "mothering." One institution for foundlings alone is paying for the "mothering" of 3,000

babies in individual homes, boarding out its 3,000 little charges in humble homes rather than taking chances with them within its own well-equipped walls.

Then by way of contrast look at the lower East Side, with all its congestion and its huge foreign element. On such crowded streets as Ludlow, Norfolk, Suffolk, Clinton, Attorney, Ridge, Willet, Sheriff and Cannon not a baby has died since June 1, despite heat, unsanitary environment and ignorance. Mother love and breast milk have been the Health Department's first aids here in the midsummer fight with death.

Then cross the town and take a glance at the upper West Side. In the district bounded on the south by Seventy-second Street, on the north by One Hundred and Fifth Street, on the east by Amsterdam Avenue, and on the west by the Hudson River, not a single baby under two years has died since June 1. Of course, many of these families have taken their children out of town, but there are hundreds of babies left in the district just the same, and they are thriving because they have individual mothering. To the north and south of this district you find more institutions and heavy infant mortality.

And even if, in the home, a baby is raised on the bottle, it has that peculiar individual, personal mothering which the institution cannot provide.

The death rate this year is higher than last, but last year showed a death rate for babies that was abnormally low. This year's rate promises to run below the average of the last five years. Then, too, you must take into consideration that in the past year 800,000 aliens have landed in New York, and a large proportion of them have remained here, settling in the various foreign sections. The mothers of such families must be educated to nurse their babies if possible; if not, to feed them properly.

Forty-five per cent. of the births reported to this bureau are attended by professionals. To such cases we immediately send a nurse who instructs the mother in the care of the child, urges her to nurse it and returns from time to time to make sure instructions are carried out. Then we have seventy clinics with physicians and nurses in charge to instruct mothers in the preparation of artificial food for infants. The ignorant mother may buy good milk, but not know how to keep it in her own home.

So you see, the Bureau of Hygiene must fight against two powerful factors, the ignorance of the very poor and the growing number of foundlings for whom institutions cannot provide natural, individual mothers. Eliminate the institution and New York's death rate among babies would be very low. I cannot say that mothers to-day are unwilling to nurse their babies as their mothers and grandmothers did before them, but I must admit that many of them are prevented by economic conditions, as when they go back to work within a few weeks after the baby's birth. Many mothers are ignorant of the dangers of bottle feeding, and for some inexplicable reason of their own think that bottle feeding is more convenient or less expensive.

When we can find more homes for foundlings and thus relieve the congestion of institutions, and can educate the mothers up to the realization that nursing a baby is the best form of life insurance, we will bring the death rate of New York babies down to a minimum.

DUST AS A CAUSE OF DISEASE

By FREDERICK L. HOFFMAN.

The dust problem underlies all deliberate efforts to improve the conditions which, more or less, determine human health. Other things equal, the length of life will be in almost exact proportion to the degree and kind of dust exposure. Those who live in a dust-laden atmosphere are especially liable to diseases of the respiratory system.

Outdoor dust, as met with on streets and in travel is, in a measure more of a public nuisance than a direct menace to health. The dust of streets and roads is, however, the cause of a vast amount of sickness. Automobiles have increased enormously the difficulties of dealing effectively with this nuisance. Street dust is but street destruction and disintegration. The use of tar and oil binders, of asphalt emulsions and similar preparations, are effective aids in controlling the dust menace and preserving the roads. The watering of public streets and highways is entirely insufficient.

Crude methods of sidewalk cleaning are practically universal and even where ordinances exist that require such cleaning to be done early in the morning they are seldom enforced. It is only on rare occasions that previous sprinkling prevails. Dust, in cases of this kind, may carry infection, directly by means of dried tuberculosis sputum.

Vast quantities of health-injurious dust are also produced during building operations. The workmen themselves are most seriously affected. Still more aggravating is the nuisance in the case of building demolition because of the non-use of spraying, sprinkling, or dust laying material, which a rational municipal administration should insist upon. The London county council has decreed that such work shall be restricted to the hours between 6 o'clock in the evening and 10 in the morning. The walls are thoroughly watered during the process.

More serious than outdoor dust is that met with in houses and in public places. The methods of cleaning in these places are rarely more than crude methods of dust disturbance. The ordinary crude ways of sweeping should be absolutely done away with in public and semi-public buildings and pneumatic methods of dust removal insisted upon. Public conveyances, Pullman cars, plush cushioned street cars, particularly require to be cleaned and disinfected with great care. It is a most serious reflection upon the present state of public intelligence that practically no objection should be raised against the brushing of coats, hats, etc., after a dust-stained travel in Pullman, sleeping or parlor cars.

The problem of reducing the dust nuisance to a minimum in public school buildings is peculiarly difficult. The most intelligent means of cleaning should be insisted upon in place of the present crude methods. The close coincidence of school attendance with epidemics is very largely the result of dust exposure.

Domestic dust is a more serious menace to health than is generally assumed. Pneumatic processes of cleaning should, as far as practicable, replace crude methods of sweeping and dust disturbance. Needless carpets, rugs, hangings, etc., should be done away with. It is not at all going too far to absolutely prohibit the sale and use of feather dusters, as perhaps one of the most seriously detrimental agencies to health in the home. The use of proper dust-binding floor covering material reduces the dust to a

minimum. In matters of this kind the useful should precede the ornamental.

Dust prevention and removal in public places or the home must necessarily be inter-dependent with methods of effective ventilation. In all dusty trades the chief aim is to remove the dust at the point of origin and before there has been any chance for atmospheric contamination. By local ventilation, as it is called, the dust is carried out by means of exhaust fans. Of course, where the object of the manufacturing processes is the production of dust itself, as in the case of flour and cement, methods of preventing dusty substances from mixing with the general atmosphere are governed by commercial desire to eliminate the element of waste. As pointed out in the report of a departmental committee on ventilation. "The application of such effective devices can best be observed in modern flour mills using the patent roller process, in fur blowing rooms of felt hat factories, and numerous similar establishments. In cases of this kind the commercial object of avoiding waste, or loss of valuable substances, coincides happily with the humanitarian desire to reduce health-injurious conditions in industry to a minimum."

There will always remain some occupations where dust avoidance will be practically impossible. The use of efficient respirators is to be insisted upon. One very simple precaution, however, is to breathe through the nose, and during work at dusty processes there should be as little conversation as possible. The nose is peculiarly adapted by nature to interpose effective obstacles against the admission of particles injurious to the air passages and lungs. The nose should, therefore, be kept in a thoroughly healthy condition, and its cleansing morning and night insisted upon, as equivalent in importance to the brushing of the teeth.

In its large aspect, all matters of this kind involve the question of community responsibility. What is required to-day is effective public sanitary supervision and control of schools, factories, public conveyances, public works, highways and public buildings. Throughout the English speaking world there is now a vivid realization of the economic value of human life and health. In no field is the outlook for successful work more hopeful than in that of dust prevention as the first successful step towards the elimination of an agency decidedly harmful to human health and life. The control of the dust nuisance on public highways must needs have its effect on real estate values, which are now, in many localities, depressed because of the diminished attraction of country life. Enormous sums which are now wasted on account of sickness will become available for other purposes. Those who now die in the midst of a useful career, will survive to old age. Thus the dust problem, all comprehensive and all inclusive, constitutes one of the greatest sanitary problems of the present day.

World Views

Avoiding Slum Life.

"There is not as much attention paid to the lives of the people, and especially to children, as to the stock. The people study the conditions under which stock should live, but they do not consider the lives of the people. The Anglo-Saxons have led in many things, and they must now lead in finding a solution to this slum problem."

These were the words of Henry Vivian, M.P., for Birkenhead, in the British House of Commons, speaking before the Canadian Club at Victoria, B.C., on the 15th of last month.

Mr. Vivian outlined what had been done in England in regard to model villages. He showed that a medical examination had found that the average child at fourteen years of age in Port Sunlight was five inches taller than the child of the same age in Liverpool slums, and weighed thirty pounds more. These physical results were very marked, but the moral differences were equally marked. In London they had half a million people living in one-room tenements, and two million people in two-room tenements. They were now trying to sweep out the one-room buildings and to improve the other conditions.

Ten years ago the movement was looked upon as the gospel of a few cranks, but to-day it was the active purpose of a great mass of people. Tens of thousands were engaged in this work of rooting out the slums.

A city covering a thousand acres and capable of accommodating 30,000 people was being laid out thirty-four miles north of London, and already 8,000 people were living there. The difficulty was to get industries to move to these new model cities. They were now, however, building garden cities in the suburbs of all the great cities, and were meeting with great success. He gave examples of people who had moved out to these and who said they would never return to the old conditions. Those children who, under former conditions, were never well, were found to be seldom sick under the new. The conditions also had an effect on the characters of the people.

Mr. Vivian then spoke of the fact that all the new countries were repeating the mistakes which were made in the Old Land. The slum areas in Montreal for instance, he said would not be tolerated for twenty-four hours in London, and in Toronto also these were beginning to grow up. People imagine they can be careless in the matter of developing towns.

Power was given to the municipalities in England to lay out town-site areas both within the cities and in the country surrounding them. There was growing up within the centres a thinking organization which pictured what the cities of the future were to be. Germany had led the way in this laying-out of cities. In Frankfort, for instance, the city was planned for the next hundred years. There were parks and squares all arranged for the lands which were now under cultivation. When the owners of these came to build they had to fall in line with the original plan.

As Canada is forcing her industrial life in the direction of building big cities, she should see that she has not at a fu-

ture date to provide breathing spaces at enormous cost. In London they were taking down buildings that had been up only ten years in order to provide these. When a man marries he provides for the children which may come, but the municipalities seemed to have no conscience or forethought. They should have regard to the future and the public good. No one need to be injured in doing this. All that was necessary was to follow the rules of the game. Here there were enormous opportunities. There was a great land to be covered by an enormous population. It was for us now to determine whether the evils of the Old Country were to be repeated.

"Anglo-Saxons have shown they can destroy life better than anybody else," concluded the speaker. "We are thrilled by the fact that our soldiers did so well in the battles of the past. The day of the battlefield, is, however, nearly over, but still there is a struggle ahead. In the past the struggle was on the battlefield, but to-day it is one of brains, and in future it will be largely a moral struggle. It is my desire that the Anglo-Saxon race shall keep ahead, and in order to do this we must lead physically, intellectually and morally. Every town should have a great purpose before it. May Canada not lose the great opportunity which she has."

Necessity for Health Officials.

There is a necessity for public health officials because it is not possible for one person to protect himself from disease if those about him are carelessly scattering disease-breeding germs abroad. There must be some one in authority over all the people to guard the health of a community, and public health officials are absolutely necessary if sanitary measures are to be enforced. Only those who have been especially trained for the work have the skill that is necessary to fight infectious diseases successfully, and only those in authority to do so can compel careless and unclean citizens to live in a sanitary manner.

Without laws to restrain them some people would keep breeding places for mosquitoes and flies, spit on sidewalks, neglect to vaccinate and go about among the people carrying the germs of infectious diseases. It is the duty of everyone to help and encourage health officials, for they have but one object in view, and that is to save the people from the ravages of disease. What they do is done for the good of the people over whom they are watching, and it is the duty of all citizens to help them to save helpless men and women and their children from disease and death.

More than half the deaths on this continent are due to preventable germ diseases. A conservative estimate of the cost to the people brought about by ravages of preventable diseases is a billion and a half dollars a year. One can begin to realize some cause for this great cost when they think about the deaths in our cities, each year, from consumption, typhoid fever, pneumonia, dysentery, diarrhoea in children, etc.—all preventable diseases and susceptible of eradication by common sense sanitation. By it we secure for our people clean streets, clean premises, freedom from pests, like flies and mosquitoes, pure milk, pure water, the soil about our homes free from germs and the air we breathe free from dust-bearing disease germs.

Sanitation and sanity are words that have the same origin. Sane people who know the value of it favor sanitation, while those who understand the importance of sanitation and do not favor it to that extent are insane. To teach the people the principles of sanitation does more good than making sanitary laws because

when our citizens understand the reasons which so imperatively demand the enactment of these laws they are very anxious to obey them, and do not need to be coerced by any laws or ordinances.

Disease-bearing germs find their way into our bodies often through the food we take. We are able to avoid this danger by seeing to it that the food sold in our markets is pure. In order to do this certain sanitary rules must be enforced. For instance, the meat must not be hung up in front of the butcher shop, because the wind carries germs to it in the dust it blows about; it must not be exposed in the window of the shop unless it is protected from flies, because flies carry germs on their feet; it must be free from taint to avoid ptomaine poisoning. Germs may get into food through diseased animals which have been slaughtered for food or through being handled by unclean hands or carried to market in unclean receptacles.

Sanitary teaching tells the people that cleanliness prevents germs from getting into food and cold keeps them from multiplying if they should get in. Milk is the most dangerous food we use, because so much of it is taken without cooking, and if it contains the germs of tuberculosis, typhoid fever, scarlet fever diphtheria, etc., they go into the system in a vigorous state. Diseased cows should not be used for dairy purposes, and diseased people should not milk cows or handle the milk in any way. Wise sanitation sees to it that pure milk is placed soon after milking in clean bottles and promptly delivered to those who are to use it. Nearly all of the cases of cholera infantum are due to germs that are in milk. For this reason the health authorities are expected to watch with great care the quality of the milk offered for sale, especially in the hot season, when summer weather weakens the babies and renders them less able to combat the germs of disease. It is highly important that milk should be collected in as cleanly a manner and cooled quickly to prevent the multiplication of germs in it.

Nearly all the germs that cause disease in man come from persons who have a germ disease. Insect bites, dust, water and food are dangerous only when they have become infected with germs from some human being. To prevent the spread of disease we must destroy the germs that come from the bodies of the sick to prevent their reaching healthy persons and producing in them the same disease.

Sanitation teaches the people that light is destructive to germs for drying kills most of them, heat destroys them all, and chemical disinfection is a most valuable aid in our fight against these little enemies. In this way all wastes from the body are rendered harmless, and if all of our people knew the value of disinfection and practised it, the most important step in the prevention of germ diseases would be accomplished.

Isolation and disinfection are twin sisters in checking the spread of infectious diseases. Every one of the innumerable intestinal diseases that occur every year are caused by germs that have escaped from some diseased person in wastes that come from the bowels or kidneys.

It has been considered healthful for human beings to come in contact with the soil, and so it is when the soil is not polluted as it so often is about the house or barn yard. These places are very dangerous playgrounds for children, as they come in contact with the germ which through eating with unwashed hands or through wounds on the hands or feet, enter the body.

Our health officials insist that all cases of infectious diseases should be reported to them at once, that they may pla-

card the house and keep the children from school. They can then make sure that the house is disinfected after the patient is well.

Sanitary officers are constantly at work in the schools teaching and preaching the benefits to be secured by sanitation, watching closely for every unsanitary condition about the school buildings and playgrounds and guarding the children from the danger of infection from the presence in school of children suffering from infectious diseases. Vaccination is more carefully and scrupulously attended to by expert physicians and all is done with a view to aiding the mother and teacher in preserving the health of the children under their care.

The chief trouble in carrying out sanitary measures is the lack of knowledge on the part of the people about germ diseases. Persons who have had no instruction on this subject cannot understand the importance of sanitation. Therefore, instruction is indespensable, for wherever a knowledge of disease germs go the fear of them and the effort to escape them will soon follow. Every individual must remember he is setting an example, and see to it that the example is a good one. If he would help the cause of sanitation he will see to it that his own premises are clean, he will permit no rain barrels to breed mosquitoes, manure piles to hatch flies nor will he be seen spitting on the pavements.

Experience has demonstrated that sanitation can banish or seriously check in any community any germ disease. Disease germs kill more than half the human race, and these germs come from the bodies of sick persons. Let me insist that it be not forgotten that they enter the body through wounds, and guard the mouth and nose and prevent insects from biting us. In this fight we must first destroy by disinfection all germs as soon as they leave the body of the sick. In the second place, we must prevent the entrance of germs through the different avenues mentioned, and lastly, we must fight these germs after they have gained access to our body by keeping up the resisting power of the body, that is, keeping the body in good health so it will be able to combat disease germs. It has been conclusively demonstrated that alcohol lessens the power of the body to kill germs, overwork, exposure to cold, wet feet, hunger, lack of fresh air and sleep, injure the body and make it a good soil in which to plant the germs of disease.

Bacteria are the smallest of organic life, they multiply with astonishing rapidity by sub-dividing, that is, one becomes two, two become four, and so on. Some forms of bacteria produce disease; they enter the body through the hair follicles, the sweat glands, through wounds, insect bites, the mouth and nose. They are abundant in all air passages. About 25 per cent. of deaths in this country are due to bacteria in the air passages. These germs should be destroyed and their entrance to the air passages guarded, while at the same time the body should be kept in a healthy condition, by pure food, water and fresh air. The diphtheria germ is transferred from one person to another in many ways. Sanitation teaches how to prevent this. Pneumonia stands next to consumption in the deaths it causes. The germs enter the body through the mouth and nose. This is an infectious disease, and the sputum should be destroyed. The germ is widespread. Fresh air and a healthy body help us to combat this disease.

Consumption heads the list, for the tubercle bacillus is the most deadly of all bacterial enemies of man. It costs more than any other disease, say one billion a year. This germ frequently enters

the body through breathing the dust that contains particles of dried sputum that some consumptive has spit on the floor or street, or it may get into the body through germs that have been swallowed in water or milk. This germ is, hard to kill; it may set up a diseased condition in any part of the body.. At least twenty per cent. of the milk cows have tuberculosis, and their milk can cause the disease in our children or in anyone who drinks it. The best way to treat this disease is in sanatoria, but this is not an essential. In every case, however, the careful disinfection which sanitary rules teach must be rigidly enforced, for in this way the disease may be stamped out.

As many disease germs are floating in the dust in the air every possible effort should be made to keep down the dust, hence the necessity for oiling the streets, and using pneumatic cleaners. Typhoid fever, cholera, dysentery, intestinal diseases, all these are germ diseases which may be successfully combated by careful observance of sanitary laws.

Protozoa are in the smallest scale of animal life. They are abundant in water; mosquitoes carry and spread them, as in malaria, which is caused by the bite of only one kind of mosquito. Malaria may be prevented by the use of screens for those affected, care in avoiding the insect bite and by destroying the mosquitoes and their breeding places, such as pools of water and weeds.

Yellow fever is contracted only from the bite of a certain kind of mosquito which never wanders more than 200 yards from its place of birth. This knowledge enables us to prevent an epidemic of yellow fever and stamp out the disease. However, this can only be done through the aid of public health officials. The breeding places of mosquitoes, such as rain barrels, must be removed, the pools of water must be covered with kerosene oil.

Before vaccination was discovered smallpox was one of the most dreaded diseases. It was more prevalent than measles and scarlet fever. Now where vaccination is properly attended to it is obsolete. Everyone should be vaccinated to protect himself and others, and it is best to be vaccinated every three years. Measles and scarlet fever are highly infectious diseases, and should be carefully quarantined and all body wastes destroyed as required by sanitary rules.

Intestinal worms are quite common, and many are very injurious to health. They can all be avoided by proper sanitation. The hookworm, common in the Southern States, poisons the body with toxins, causes marked anaemia, and in some cases death. The eggs of the hookworm from the human alimentary canal get into the soil, where they develop into tiny worms, and these smaller worms enter the body of healthy people through the skin, through the food, the water that is taken with soiled hands, where they multiply in the intestines. The patient becomes pale, emaciated and weak. These worms may be easily destroyed. They are more common among children than adults, because children go barefooted and eat with unwashed hands after playing in the dirt. The disease can be easily prevented by the use of water closets, which avoid the pollution of the soil. Very recently Mr. Rockefeller has given a large sum of money to be used in organizing a fight against the hookworm, and we may confidently expect to see these pests exterminated in a short time. Does it not seem that with such an array of facts much can be done to reduce the attack of these preventable diseases by combining

all available means in the fight against them, the family physician, the public and the health officer?

A Health Investment.

As a business proposition the investment of $3,000,000 which would save $23,000,000 would be considered a remarkably fine piece of work, and yet this is what is claimed to have been done by the Pennsylvania Health Department, which has just issued a bulletin informing the taxpayers of that state how the money has been expended and with what results. This same document goes on to say that by co-operation between the state, municipal and health authorities, aided by the good will of the community, marvellous results can be attained. In four years the health department has expended $3,000,000 in conserving the public health and shows how the state has received $23,000,000 in return.

In three years the State Health Department of Pennsylvania has distributed 14,000 doses of diphtheria antitoxin for use upon the children of the poor of the state, and has saved the lives thereby of almost this number. Under the wise administration of this department and the judicious expenditure of its funds, the death rate from tuberculosis has fallen from 134 to 120 to the 1,000, free dispensaries and a tuberculosis colony have been established, and it is largely to these agencies that the good result is indebted. Then the health department has taken hold of the typhoid fever situation, which at the time was making itself a terrifying menace to the people, and with the aid of numerous different bodies and of municipalities induced the legislature to place the control of all water courses under supervision of the governor, the attorney-general and the health commissioner and the result has been that the typhoid fever rate has been reduced one-half.

One fact of the bulletin, while not particularly alluded to, was that of the hearty co-operation of all persons concerned in securing the results desired. The health board took the public into its confidence and plainly indicated the purposes of such actions as it proposed to take, stated the cost of whatever campaign was proposed, and there followed the hearty co-operation that made success an assured fact, and the bulletin was not slow in placing the credit where it properly belonged. The people were shown the necessity for any contemplated action and willingly lent their influence and approval toward its consummation.

The country is waking up to the fact that a human life represents a certain amount to the state as an asset. Too long has it been the rule to compute the assets of a community according to its taxable values, but now, together with the cry for a conservation of other national resources, has gone forth a demand for the conservation of life. From every large city in the land can be heard the cry for purer milk for the children; the pure food laws are nothing less than an answer to this demand; from every quarter it is told how foodstuffs are more closely scrutinized; cities are requiring screens and other sanitary precautions as never before, and, as in Pennsylvania, it is being understood that the expenditure of a few millions of dollars to-day safeguarding the health of the people will in a few years return to any commonwealth several hundredfold increase in human life and health, not to consider the earning capacity of these citizens to whom the state owes a proper sanitary supervision.

Building Sanitary Homes.

One of the most encouraging signs of success in the work of the Wisconsin Anti-tuberculosis Association for the Prevention of Consumption is the wide adoption of the new idea in residence construction. Hundreds of homes built in Wisconsin this year make ample provisions for open-air sleeping, the foe not only of consumption, but of many other diseases that result from close confinement, bad air, ill ventilated chambers and lack of sunlight.

Architects and builders have recognized the demand of the day for dwellings which will not shut out pure, fresh air and will admit plenty of sunlight. The number and area of porches has increased in response to the demand for the sleeping quarters that make for health. Perhaps at no time in the history of civilization has so much attention been paid to the general sanitary features of the home, says the Waukesha Dispatch.

"Were all these things done simply and exclusively for the benefit of the tuberculous, or those who are predisposed, or those who wish to keep consumption far from themselves, they would be of incalculable value, but while doing this, they strike at practically every disease that man is heir to, again proving that the anti-tuberculosis crusade is the greatest boon to the general health of the general public," says a bulletin issued by the state society.

"For at the same time that the root of the tuberculosis evil is being struck at, the preachments of sane, sanitary living apply to all other diseases. It is truly said, therefore, that the anti-tuberculosis crusade, by influencing effort for the prevention of other diseases and conditions inimical to health, making for a mared uplift in living and working conditions of the masses, and proclaiming the gospel of fresh air and right living, is rendering to the world a greater service than the most important movements of the ages."

The Cholera in Russia.

There is no likelihood that the world will exaggertae the extent or the virulence of the cholera plague in Russia. That unfortunate country is never wholly free from it, but this year it constitutes an epidemic. There have been 57,000 deaths already, as compared with 28,000 in 1909 and 17,000 in 1908. Professor Rein of St. Petersburg, who has been commissioned by the government to organize the campaign against the scourge in three of the provinces, estimates that the number of cases in the empire since the beginning of the summer is well over 81,000.

What has Russia with which to stamp this out? She has very little. Cholera picks off its victims where the water supply and the general sanitary conditions are bad. Russia's inferiority in these respects is notorious. Even the water supply of the capital is condemned as unfit. The medical profession is fearfully undermanned and the government itself is anything but intelligently aggressive. For example, the president of the "Black Hundred" of Samara, one of those "patriotic" bands which now wield such fearful reactionary power, was sentenced to a mild month's imprisonment for inciting a mob against the sanitary and medical authorities. In any civilized country where the people are not so nice about the death penalty as they are in Russia, that precious gentleman would have been shot in short order.

The approach of cold weather will tame the scourge somewhat, and give the authorities a grip on the situation. In the meantime the doors have been slammed against Russia in every civilized country. Our own authorities are, na-

turally, especially vigilant. Whether the world can render any effective assistance to the stricken thousands is a question, since whatever was done would have to be done through the authorities, and they have not yet manifested any great ability to draw on the resources already at hand.

A Knowledge of Hygiene.

In his recent statement against the creation of a United States Federal Bureau of Health, Mr. Hyland C. Kirk indicates that the prime need in the protection of health is a knowledge of one's self, of the laws of hygiene. "If all the hostile microbes were suddenly destroyed," he said, "it would not insure health to man; on the contrary, it might prevent his further advance, since every step in his rise from the primitive cell, if not the primitive atom, has been a victory over hostile forces, without which he could not have risen at all. Man started as a germ himself, the most obstinate of the bunch, or he would not have risen so far. If every microbe were destroyed it would not prevent the inebriate from taking his dope, the glutton from straining his system by over-feeding—it would not lessen the indiscretions of the sensualist or furnish grey matter to the deficient brain."

There can be no dissent from the conclusion. A parent may surround a son with all that is chaste and good, but the parent cannot insure virtuous living by the son. The state may create sanitary conditions of living, but it is powerless to prevent self-abuse. Environment has large influence on virtue and health, but both require self-control and knowledge of self.

We have been trained to put too much dependence in others, to follow this bent because it is the path of least resistance, the easiest way. Self-control implies self-abnegation; and we are temperamentally disposed to do as we please. The same general truths apply to political government. Democracy is nothing more than self-control; an organized democracy, organized self-control.

Any campaign to secure a levelling up of the general average of health therefore should begin with lessons in self-control. It is one thing for a man to know that to eat too much is not good for him, but no one except himself can restrain his over-consumption; or to know that without fresh air his strength will be vitiated and his power to resist disease weakened, but society cannot force him into the fresh air. Society, however, can equip him when he is at school, and he may equip himself in later life, with a knowledge of the human machinery, its needs and the perils that threaten it. It is a campaign of education along these lines that the country needs.

Street Car Ventilation.

A new ventilating system for Chicago street cars, meeting the exacting requirements of the health department, has been introduced to that city.

Automatic air-circulating devices have been tried on a few cars and are being applied to others, the motion of the car serving to draw out the vitiated air within, but in the new coaches the stale air which passengers have been wont to breathe is literally pumped out through the roof, while a new supply flows in through openings in the car floor. In winter the inflowing current will be warmed by contact with the car heaters.

In appearance the new cars are much like those of the old type now operating on the street railway lines. They are three inches narrower, providing a better chance of life for unfortunates who may be caught in the "death zone"

between passing coaches. A small chamber at the end of the car roof, containing a motor-driven fan, gives the only external evidence of the new ventilating device.

Within the cars it is expected that ample evidence of the change will be afforded when cool weather comes and windows are closed. A continual passage of air through the car will be maintained at approximately 20,000 cubic feet an hour.

The fan revolving on the roof of the car draws out the impure air and tends to create a vacuum, and nature, "abhorring a vacuum," as the text books so dearly loved to proclaim, outdoor air is forced in through apertures at the floor line, being warmed as it comes in.

The ventilating appliance with which the new cars are equipped is known technically as the Cooke system. It was adopted after numerous tests in which representatives of the health department had a hand. A careful analysis was made of air at various distances above the ground to find whether a better supply could be had at the roof level, the window level or the floor level, following which it was decided that the air coming in at the floor level was salubrious and not much more dust-laden than that higher up. The further advantage of being able to warm it at the point of entry decided the officials in favor of exhausting the air at the roof and admitting it at the floor.

On the new cars it is predicted that the air which passengers breathe on their trips to and from town will be purer than is the air of the average home, so that, instead of being prejudicial to health, the street cars of the city will be a factor for longevity.

Bacterial Monoplanes.

The flying machine for carrying man is practically bran new, although man is hundreds of thousands of years old. Typhoid fever, tuberculosis and intestinal disease germs have had a flying machine for quick transmission as long as man has existed. The disease monoplane is the common house fly.

Scientists say that flies have killed more people by infecting them with disease than all of the wars, the world has known, put together. The fly covers distance rapidly, being able to leave any part of the house or lot, and in a moment alight upon food in either kitchen or dining-room. Invariably the feet of the fly bring thousands of disease germs, and the germ is left upon the food touched.

Statistics show that millions of flies are born in half-cleaned garbage cans, the kitchen windows and on the streets. Greasy spots in the kitchen and stale food left about helps the breeding. It is agreed, however, that 99 per cent. of the flies are bred in stables. One animal furnishes the breeding-place that will fill a large city with flies.

It takes ten days for the egg of the fly to develop to the full-grown insect able to fly, and scientists declare that if proper precautions are taken in the cleaning of the stable and garbage cans once a week, much can be done to do away with the pest. The birth rate of the fly will be amazingly decreased, and the death rate of the city will be materially lowered at the same time.

Some communities have realized the value of preventable measures, and have passed rigorous laws ordering concrete pits built in all livery stables and small city stables in the rear of residences which are made the depository of all stable litter, and the refuse is treated

with disinfectants of such power that every egg and fly grub is killed. The best way to handle such refuse is to burn it, so experience has shown.

Artistic Shirt Sprinkling.

Ignorance of early Chinese history prevents us from stating positively that the ancient and honorable Chinese methods of sprinkling shirt fronts originated in the reign of the Emperor Kwong-Su, a sovereign justly esteemed for his artistic and sanitary tastes.

Nor would we go so far as to affirm that over nine hundred years later the first sovereigns of the usurping Manchu dynasty made themselves popular with the intelligent classes of the country by promising to see that this ancient and honorable custom was maintained inviolate.

To go even further, we would not assert positively that the sage whom the world knows as Confucius enjoined this particular method of sprinkling shirt fronts as the one which on the whole was most in conformity with proper ethical standards and the respect due one's parents.

But we have not the slightest doubt that each individual Chinaman has an uninterrupted family tradition that the facial sprinkling method was employed by his ancestors from the earliest times and that all divergencies invariably roused the anger of the gods.

From a strictly Occidental standpoint, the attempted abolition of facial sprinkling is but another step in the direction of the apparently inevitable age of machinery. The personal, individual way of making or doing things has almost everywhere yielded to machine methods.

Why should the old-fashioned handicraft Chinese method of sprinkling shirt fronts prove an exception to the general rule? Artistic, individual as it is, it is only natural that it should yield to the cold, mechanical sprinkling pot.

A Japanese Rest Cure.

The Japanese are catching up with us. They now enjoy the blessings of nervous prostration and are practising their own form of rest cure. The Japan Magazine tells of this latest step in progress:

A lady by the name of Kawakita last autumn was threatened with a nervous collapse, which necessitated a visit to the seaside, and being at Kamakura, she was persuaded to enter upon the form of rest cure practised under the direction of a priest of the famous Kenkoji temple.

"It was on October 3rd, last," says she, "that I made the acquaintance of the kwanchosama, the director of the retreat. He acceded very kindly to my request to join in the exercises, and after asking me many questions about my life and about the beliefs I had hitherto entertained as to gods and Buddhas gave me a subject for meditation.

"The subject was 'Honrai no Memmoku,' and I was told to think about it until I had discovered its meaning or thought I had done so. When I had solved the problem I was to come again to the director, who would either give me a second problem or send me back to think it over again.

"The problems thus given are not of a nature to be easily solved. I cannot tell you the meaning of the particular one propounded to me, because I am not allowed to divulge the secret; it will suffice to say that some people will think over one of these formulas for a year or more without coming to a satisfactory answer.

"It was very difficult for me, with my family cares and household duties, with servants, children and visitors coming to interrupt me, to devote my whole atten-

tion to the problem assigned me, but fortunately I have been able to avail myself of stated periods of quiet.

"Once a month from the beginning of October to the end of March there is a retreat (seishin) here at the Kenkoji to which all students of the contemplative life are allowed to go. The retreat lasts for a week, and during that time the male members live entirely at the temple, the women in private houses or their own homes.

"Hours of silent contemplation are observed, beginning at 7 o'clock in the morning and spread over the day till about 6 in the evening—five hours of silence in all, with the director sitting in the next room to receive communications and to furnish us with fresh problems if necessary.

"I had to leave the house early in the morning with a cochin (lantern) to light me; it was 10 o'clock in the evening before I returned. Our meals during the day were supplied from the temple; for breakfast tea, rice gruel and relishes; at mid-day rice, kenchin soup and vegetables boiled in soy; in the evening tea and rice gruel.

"The most important of these meetings was the one in January. During the course of it I had the good fortune to solve my first problem. The second problem given me was 'Kane no ne wo tomeru,' how to stop a bell from sounding.

"The rest cure is now over. I have come out of it fortified in body and in mind. I am no longer nervous and irritable; I am able to look at things more dispassionately and feel myself more fit than I was before to cope with the difficulties and worries of life."

A Cup Story.

His face a deathly white, his body little more than a shadow, a young man, evidently fighting the last round of a desperate battle with the great white plague shuffled slowly and painfully along the corridor of the city hall. The thin, wasted form and hacking cough told as plainly as words that he was in the last stages of tuberculosis.

It was unusually warm in the city hall and the long hall, generally cool and comfortable, seemed to generate heat. The young fellow seemed to be on the verge of collapsing when his eye fell on one of the drinking tanks which were placed at intervals in the long hall. At least a drink of cool water would afford some relief.

Filling one of the glasses he drained it to the last drop, the cool water seeming to alleviate his suffering momentarily, and a second drink followed the first. Placing the glass back on the stand by the tank he tottered slowly down the corridor and disappeared through one of the big doors at the north end.

Certainly nothing unusual about a man walking through the city hall and quenching his thirst with a glass of fresh water. Such a thing happens thousands of times every day. The city hall is usually the coolest place in the city on a warm day, especially the corridor, and many persons passing to and from their homes go through the big stone house to escape the penetrating rays of a summer sun, and the majority of the pedestrians stop at the tank for a drink of water.

Therefore, the question arises, "How many persons placed their lips to the same glass used by the young man whose life will soon be cut short by consumption?

The common drinking cup is a source of disease and a menace to the public health; therefore be it resolved,

That the secretary of each Provincial Board of Health prepare and

issue a notice to railroads and schools forbidding the use of the common drinking cup.

And be it further resolved,

That the secretary instrcct the health officers to see that this rule is enforced.

There are many substitutes for the common drinking cup, chief among which may be mentioned what is commonly known as the 'Bubbling Fountain.' Fountains of this description can be installed in any locality where there is a public water supply, also in buildings and institutions having pneumatic water supplies or elevated tanks for the storage of drinking water.

Where running water cannot be obtained, the only substitute for the common drinking cup is the individual drinking cup. Several novel makes of sanitary drinking cups are on the market, most of which are inexpensive, and these are particularly adapted for use in railroad trains and in any place where many people congregate. Machines have been designed for vending of such cups by the insertion of a cent in a slot, and in some instances a drink of clean and cool water is furnished by the same machine.

Toothbrush Campaign.

A toothbrush campaign will begin this fall in all the public schools of New York City. It is to include a careful examination of the teeth of every one of the 700,000 children in schools. Lectures are to be given on the care of teeth, and toothbrush exercises by classes may follow.

Figuring 700,000 children in the schools, and thirty-two teeth to the pupil, this makes 22,400,000 teeth to be examined.

Coincident with the starting of the examination of teeth of school children three clinics will be established, in which those children whose parents cannot afford the expense of treatment will receive it free.

The dentists expect that a year's work will show that with teeth kept in proper condition the efficiency of the pupils will be increased 56 to 200 per cent., for bad teeth are responsible for much illness.

The basis for all these plans is the discovery that thousands of New York school children have no toothbrushes. Many of them do not even know what toothbrushes are.

Foreign military attaches who followed the campaign against Spain in Cuba were struck by the sight of campany after company of the United States army that marched past them going into action, each soldier with his toothbrush stuck, like a feather, through the band of his hat. It was a custom they all followed, regulars and volunteers from the farms, rough riders from the West and rough riders from the New York clubs. Few soldiers were without toothbrushes.

Maybe toothbrushes are more necessary to people who live as Americans live. Dentists who made an examination of the teeth of children in four New York schools recently found that more than half the children of foreign parentage they examined had no toothbrushes, but they found as many sets of perfect teeth among them as among those who knew perfectly what toothbrushes are for.

Editorial

Street Vacuum Cleaning.

It has been thoroughly demonstrated that the only scientific way to "sweep" is with the vacuum cleaner. Where the old brooms are used the dust, dirt and germs are merely pounded back on the furniture, fixtures, walls, ceiling and on the floor. The vacuum cleaner sucks up all the dirt and dust and deposits every particle of it in an air-tight basin where it can be carried outside and destroyed.

Granted that the streets of a city are dirty and detestable as well as menacing and dangerous, is there anything more ridiculous than watching the futile attempts of the "White Wings" to keep the pavements clean? Men with brooms scrub and sweep, horse-drawn rotary brooms do their best but the dirt is never half collected and is tracked back into the highway nearly as fast as it can be swept into the gutter. Many cities with abundant water supplies have adopted the custom of flushing the main streets every night. Thus washed the streets are reasonably clean, but there are ever and ever so many cities which cannot afford this extravagant use of water.

The time has arrived when progressive cities should clean paved streets by air pressure and air suction and oil the unpaved. The vacuum cleaners used now in hotels, apartment houses. public buildings and in many private homes should be adapted to the work of street cleaning.

The cost would be slight, the streets could be piped, the air exhausted at certain points, and men quietly moving up and down could pick up with their air-exhausting machines every particle of dust, paper and dirt.

While waiting for the streets to be provided with air suction pipes distributed economically throughout our cities, the thing could be done temporarily. A large vehicle with an electric air pump moving along the streets, followed by men passing the air exhaust over the street surface, and drawing the dust and dirt into a dust-proof box on the wagon, would diminish the death rate, do away with a public nuisance, and remove far from the city endless billions of disease germs every day.

The dust collected could be burned or hygienically disposed of for fertilizing purposes.

Fortunately, the disappearance of the horse from our streets is a matter of only a few years. The dumping of dirt on the streets by business houses will be stopped. Unpaved streets will be oiled and pavement cleaning will be done by the vacuum process, followed by regular sprinkling with disinfectants—salt water where possible.

It is perfectly safe to say that before the end of this century every big city, its streets, public parks, alleys and crevices, will be kept as clean as the modern door yard.

Inter Alia.

The preservation of the public health is the most important work of conservation. It is fundamental. The wanton sacrifice of human life shows a low conception of governmental responsibility. The warfare against disease is the duty of a community which would stand foremost in modern civilization.

The cause of contagious diseases was disclosed by Louis Pasteur. The researches of that resourceful genius brought to light the fact that all contagious diseases have a clearly defined and obvious origin. They can no longer be considered as mysterious visitations and insusceptible of tangible control.

* * *

We should aim to have towns in which no one will languish away with tuberculosis; in which no children shall die of diphtheria; in which no typhoid fever, no scarlet fever, no dysentery, no spinal meningitis shall gain a foothold.

* * *

This ideal should not be laughed at as a foolish dream. We cannot bring such a state of affairs about at once, but we can do our part toward creating the conditions which make it possible. We should bring our people to understand that so long as any of these diseases exist their prevalence is a distinct reproach.

* * *

This is true because they can be eliminated. The way to prevent them is known. We protect our citizens from murderers and burglars and it is just as incumbent upon us to protect them from the unseen enemies which attack the homes.

* * *

Professor Fisher, of Yale, estimates the value of every individual at a particular age as follows: A new born infant is actually worth $90; a five-year-old child $950; a ten-year-old child $2,000; at twenty years $4,000; and at thirty years $4,100.

* * *

After thirty years the value of human life begins to decrease. At fifty Professor Fisher fixes it at $700. He places the value of the average life lost by preventable diseases at $1,700. He claims that these figures would prevail if people were sold at public auction on the market.

* * *

But freedom from physical suffering, from the despair of poverty, from the annual ravage of acute disease and from human tears and mental anguish, is a consideration higher and more noble than the mere economic aspect.

* * *

Recent announcements that cholera is ravaging in Russia have attracted no more attention than any other item of continental news. But if this were the Year of Our Lord, 1848, our country would be shuddering with terror as it then was.

* * *

In 1832 the cholera was raging in Russia, and spread thence, falling upon Canada with terrible violence.

* * *

It came again, striking Canada first from Russia, and then spreading over the rest of America, leaving desolation in its path.

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But now so triumphant have been the achievements of medical science that we toss aside with indifference the news item that used to cast its awful shadow. The cholera has come and gone three times since then. It came in 1854, and the sanitarians smote it as they are battling with tuberculosis now. That time it came from the pilgrimage of the Mohammedans to Mecca, always a journey of indescribable filth, leaving more corpses in its path than any war of ancient or modern times.

* * *

Every city has been too lax in protecting foodstuffs against the contaminations of the street, sidewalks and premises, and more especially against infection from

flies. But enlightened regulation must have its way. Public health concerns every individual. The time has come when the delegated authorities of the people will not tolerate such exposures as the common foodstuffs, the necessities of life, have been subjected to.

* * *

It is unfortunate that there is not a careful inspection of the sanitation of farms and villages every year. If there were, it would prevent a vast amount of illness, for there are hundreds of such places in every county where sanitation is very bad and where conditions are dangerous. However, every householder should look after it himself.

* * *

Cities are taking a deeper interest in health conditions from year to year, and as a result the number of cases of illness is gradually decreasing and the death rate is becoming less. There is need of the same kind of work on the farms and in the villages, and in the ratio that it is followed out, the same results will be noted there that are apparent in the cities.

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This is a question that has not been given the attention that it deserves. Sanitation is just as important in the rural districts as in the cities, and in many cases conditions are very much worse there in this regard. It is a mistake to think the country is necessarily healthful, regardless of sanitary conditions.

* * *

At present this must be looked after by the people who live there. It is a duty that confronts every householder, and it is one that should not be evaded nor disregarded.

Popular interest in all matters affecting public health was never more keen than at present. Formerly if there were any agitating to be done, any great fight to be organized against the forces of disease, it was left entirely to the physicians. The public has now come to understand that such movements cannot succeed without its intelligent and enthusiastic co-operation. The campaign of education that has been conducted during the last few years has given the lay public a pretty fair knowledge of the principles of common sense hygiene. Even the school children are familiar with the simple precautions to be observed to avoid contracting typhoid or tuberculosis. And yet the campaign for the elimination of these twin scourges has only just begun. So with other diseases the existence of which is a blot upon our boasted civilization. There is an immensity to be accomplished, and the public must lend its vigorous support.

* * *

Provision for the physical welfare and safety of school children is one of the first and most important things to be considered in an eductational system, and yet in many places it is either ignored or dealt with in the most unintelligent manner.

* * *

In every schoolroom or recitation room the total light area should, unless strengthened by the use of reflecting lenses, equal at least 25 per centum of the floor space, and the light should not be admitted thereto from in front of the seated pupils.

* * *

Every schoolroom or recitation room should have not less than fifteen square feet of floor space, and not less than twenty cubic feet of air space per pupil.

No common heating stove should be used for the purpose of heating any schoolroom, unless such stove be in part encased in a shield or jacket made of galvanized iron, or other suitable material, and of sufficient height, and so placed as to protect all pupils while seated at their desks from direct rays of heat.

* * *

No schoolroom should be used which is not provided with ample means of ventilation, and the windows, when they are the only means of ventilation, should admit of ready adjustment, both at the top and bottom, and have some device to protect pupils from draughts of cold air, and every school-room should be provided with a thermometer.

* * *

Every school building erected or reconstructed should be so heated and ventilated that each schoolroom shall be supplied with fresh air at the rate of not less than thirty cubic feet per minute for each pupil, and shall be heated to an average temperature of 70 degrees Fahrenheit during the coldest weather.

* * *

Mr. William George Cooper, Chief Sanitary Inspector of Bournemouth, England, has expressed the opinion that, besides improper feeding and the absence of physical training of children, the prevalance of child labor is a contributary cause to physical unfitness in after life. He advocates the abolition of the half-time system and street trading by the young, and a return to a system of apprenticeship combining instruction and practical work. He urges for the ideal home the advantages of distempered walls, washable floor covering, and sanitary bedding with plenty of natural light, pure air and personal cleanliness as the leading fortifications against disease; and he says that the modern theories of bacteriology prove that the older methods of sanitation were correct in the prevention of disease.

* * *

The conservation of the betterment of the physical, mental and moral well-being of the people must begin with the children. That is the time when mischief is done or threatened, which, if allowed to go unchecked, is irreparable in later years. It is the realization of this fact that explains why those who concern themselves with improving the condition of the masses of the people are devoting now so much of their interest and energy towards benefiting the children. Hence the movement for the establishment of juvenile courts and children's playgrounds, which is as wide as the country. The public schools have in view the education of the children, but the physical defects of eye and ear, of malnutrition and disease, must also be considered and remedied so far as possible or education utterly fails.

* * *

The effort for clean streets and public parks and places is most commendable. It is one for practical benefit as well as good appearance. A well-dressed person or a well-arranged place of business is more successful than a shabby and uncleanly one. Health is also a great consideration in the cleanliness of surroundings. Rubbish is the breeder of disease to the body as well as an offence to the eye. Attractiveness of a city is the fundamental element of prosperity.

* * *

A public toothpick would be more unpopular, but not a whit more undesirable than a public drinking cup.

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If every public institution, particularly schools, hotels, railway stations and

trains, would do away with the public drinking cup the percentage of tuberculosis and other communicable diseases would be surprisingly lowered.

* * *

It is a pity the old-fashioned cup or dipper from which all humanity imbibed in a care-free, democratic fashion should have to go. We have become accustomed to regard such cups as a sort of baby brother or close cousin to the old oaken bucket. Our grandsires, when they wished to leave a particularly gracious memorial behind them, would hang a little silver cup or sometimes even a tin cup, by a roadside spring, and then meditate upon the millions of weary people it would refresh in the years to come.

* * *

But to-day whoever hangs out such a vessel is simply issuing an invitation to a house party for germs. Students of sanitation calculate from a close observation of facts that more persons catch diseases from public drinking cups than almost from any other source. In a park, this danger is especially grave, for there hundreds of children gather from day to day. Year-old babies are given water from a dipper that may have just been used by some one afflicted with a contagious malady.

* * *

Wherever intelligent sanitation has been used it has been wonderfully effective. People once thought that the results of their own ignorance were in reality visitations of God. Better intelligence prevails now, and some of the former terrors of human life are being wiped out entirely.

Disinfection of the coaches of the Prussian state railways has been annoying the sanitation authorities, with the result that the government recently established a system of steel tubes, boiler riveted, into which coaches may be backed and exteriors and interiors rendered germless through treatment with formalin. Cars are run into these tubes, one at a time, the end of the tube closed, and its interior filled with formalin gas. The gas tank is set up as a unit in connection with the metal tubing, feeding the disinfecting gases into the tube at short range.

* * *

The general adoption of bubbling sanitary drinking fountains is advisable in order to avoid the use of public drinking cups, fountains such as exist in the grounds of the Government Buildings at Ottawa. These fountains are usually made of porcelain, with porcelain bubbling pipe, as well as a basin made of the same material. No cups are used, the mouth of the drinkers being applied to the bubbling pipe. The ever oncoming flow of water keeps the pipe and basin clean and wholesome, and all the clatter and noise, and the inconvenience, as well as the dirt and slopping from the use of cups is done away with. It is said also by those who have used this system that less water is used than by the ordinary faucet method, in which it is necessary to let the water run for some time before drinking in order to get a cool drink, and in which so much is wasted by people in rinsing the cups.

* * *

We do not believe that our people are indifferent to the safety of their families and friends; we cannot believe that the enterprise and confidence which could reproduce cities from beds of ashes would shrink from the cost of extermin-

ating two tribes of insects and screening our houses and kitchens from their presence. Our ancestors drove out the savage and fought various wars that need not be enumerated, yet it was never charged that they counted the cost of blood or treasure required to accomplish a desired result. We mourn our dead annually, forgetting that, in a majority of cases the disease is preventable. We see assets of industry and brains and character drop out of the service of the community without pausing to consider that this wealth might have been saved but for a carelessness that approaches criminality. Let us begin to realize the facts in this connection and we will give more attention to sanitation and insist upon better results.

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In the majority of cases the cost of funerals can be figured as a tax on insanitary conditions.

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In Chicago the city physician, Dr. Evans, goes into the theatres with a test tube. If he finds that the air contains more than a certain per cent. of carbon dioxide he reports that it is affected with bad organic bodies and is unfit to breathe. Chicago theatres are all required to have an exhaust fan at the rear.

* * *

A theory of the cause of infantile paralysis is that it is a germ disease, and that the germs thrive and grow as well as generate in horse manure and are spread by the manure being ground up in the dust that blows about city streets.

* * *

Investigation has brought out the fact that the disease does not develop in towns where there are no paved streets or where the streets are kept free from refuse.

If filthiness is one of the distinguishing traits of cities on this continent, it is due very largely to the fact that the importance of sanitation was not taught when those who are now in control of municipal affairs were youths. The fact merely exemplifies the old adage that not many old dogs learn new tricks. It is perhaps worth while to continue the crusade for cleanliness among the grown-ups, but it is among the youngsters that the champions of sanitation must expect to recruit that big army which will be needed to win the fight against the ignorance and indifference which now make possible the filth of our cities. The importance of sanitaion ought to be taught in the home and the school. Every citizen of to-morrow ought to be made to understand now that the germs of disease lurk in every trash heap.

* * *

Women are the natural conservers of the health of the household. Every mother gives her children their health at their birth, and cares for them as they grow up. Unfortunately, this care is too often without a basis of sound knowledge. Departments of hygiene should be established, for training in physical development, in all colleges both for men and women.

* * *

Many discriminating women refuse to patronize markets where meats are exposed on the counters. This sort of sentiment is much more effective than warnings or threats of prosecution from the public health authorities. Its adoption generally would tend toward better and cleaner stores and food supplies and a higher standard of public health.

* * *

Meats, fruits and other products kept in glass cases or under screens cost the butcher no more than the exposed goods. Few people like to think that what they

eat has been subjected to contamination by flies migrating perhaps from a stable next door. The best guarantee of pure food is dealing at stores where health regulations are respected and applied. When people refuse to patronize the other kind of places, the proprietors will be quick to fall into line.

* * *

Fruit and vegetables on the verge of decay are frequently hawked through the streets. If women will unitedly refuse to purchase food unfit for eating, and patronize only reputable dealers, health records would be much improved.

* * *

It is dangerous to eat unprotected peaches or apples or pears, meats, including fish and poultry, or vegetables exposed to the action of flies and the filth that lies in dust. Don't buy them.

* * *

The better class of merchants are beginning to realize the importance of observing rules of sanitation, but there are many whose only idea is to sell regardless of quality. This class is to be the special care of the health inspectors.

* * *

There is no excuse, but there may be some sympathy for the small grocer, with a few hundred dollars in goods, who seeks by selling damaged stock to save himself from loss which would seriously cripple his business.

* * *

But the man whose capital is ample for the installation of cold storage plants, and whose customers are sufficiently numerous to consume the most of his goods while they are yet fresh, is entitled to neither sympathy nor clemency if he is guilty of the sale of impure and decayed foods.

* * *

The wealthy grocer who attempts to increase his wealth by endangering the health of poor people, tempted to buy unwholesome products because they are cheap, is a menace to the community. And the impure food is not always cheap. It frequently happens that tainted eggs, butter and milk, filled with disease germs, command the same price that the pure foods do.

* * *

Because dealers are big is no reason why they should receive immunity. Their punishment, if they are prominent, will serve as a warning to ones not so big.

* * *

There is room for great improvement in the food articles turned out by establishments which give only what the law requires and no more.

* * *

The trouble seems to be that people think pure food laws will enforce themselves. The consumer of prepared food and of so-called "patent" remedies, or the product of "non-secret" houses, seems to have an idea that the magic symbol, "Guaranteed under the Food and Drugs Act" is full protection. He apparently has a hazy idea that the contents of every package are inspected by Government inspectors at the time the package is sealed. As a matter of fact the only protection afforded him under the law is the possibility of catching the dishonest manufacturer, and vendor, which lies in the occasional analysis by inspectors of the contents of packages or bulk articles bought by inspectors in the open market. Save in case of beef, and that only in a limited sense, there is no inspection of food products nor drugs at the actual time of preparation for the market; besides which there is the added chance of deterioration and contamination after the goods leave the producer's hands.

Dr. F. Montizambert, Director-General of Public Health for Canada has a comprehensive campaign plan against tuberculosis which is, briefly, that there should be a special medical officer in every city and town and community in Canada whose business it would be to have every facility at hand for the treatment for incipient cases. He should be a provincial officer with more or less arbitrary powers, and there should be a heavy penalty for failure to report to him any known case of incipient tuberculosis. In this way the disease would be combatted before it had progressed to the dangerous stage and it would be but a matter of a short time until the dread white plague would be under complete control in Canada."

* * *

In municipal health work fine results are produced from the use of a "health map." The map is simply a map showing streets and blocks, into which inspectors stick a colored pin in a locality where a contagious or infectious disease is found, the particular color of the pin representing a particular disease. Such maps may be of great help to house renters and buyers in the future, for they will be able to pick out a clean locality by consulting it, and know whether the house they contemplate entering is in a well cared for sanitary neighborhood and see whether it has sanitary connections before they contract for it.

* * *

The people of every city should take care that only competent men are placed on their Boards of Health, and that the Executive Officials of the Boards know their business and attend to it.

* * *

It is the desire of every normal person to be the possessor of a vigorous, healthy body. Any means to that end cannot fail to meet with popular approval. Some authorities believe that health conservation can more easily be advanced by means of the establishment of a national department of health to encourage more uniform health and sanitary protection throughout Canada, and to educate the people upon the preservation of health and control of disease, as they are now being educated upon agricultural questions by the Department of Agriculture, through literature and otherwise.

* * *

Dr. Helen MacMurchy, of Toronto, is the first woman ever appointed to the Permanent International Committee of the Congress of Hygiene. Dr. MacMurchy did not receive her appointment without stern opposition, for whenever women dare to go where they have never gone before they will be opposed. Several European medical men in conference at Paris, France, would not for a moment consider the appointment of Dr. MacMurchy. Not because she was unworthy of the appointment, but because she was a woman.

* * *

However, the influence of Sir Lauder Brunton, of London, who urged her appointment, as the least recognition the committee should give to the work Dr. MacMurchy has done in hygiene, was effective.

* * *

Special mention was made of a book on "Infant Mortality" written by Dr. MacMurchy, and which is attracting much notice on both sides of the ocean.

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Dr. MacMurchy has been honored because of her work, and her triumph will no doubt be an encouragement to all women who hope that in the big world outside of the home sex may not always be too great a handicap.

Library and Laboratory

Parenthood and Race Culture. An outline of Eugenics. Caleb Williams Saleeby, M.D., Fellow of the Obstetrical Society of Edinburgh, member of Council of Eugenics Educational Society. Cloth. 376 pages. Price $2.50 net. Moffat Yard & Co., 31 East Seventeenth Street, New York City.

This work gives in brief the art of improving the human race by scientific parenthood. The author is a life-long student of the subject, and is one of the founders of the Eugenics Education Society. Enough has been observed regarding the laws of heredity to enable us now to put much of the information gained into practice in our social relations. By a study of this work you will learn why all other forms of marriage have finally given way to the one which is now practised in all civilized society, namely, monogamy—the establishment of a family with one father and one mother. The subject is treated in two parts, with chapter headings as follows:

Part 1.—The Theory of Eugenics: The Exchequer of Life, Natural Selection and the Law of Love, The Selection of Mind, The Multiplication of Man, The Growth of Individuality, Heredity and Race Culture, Education and Race Culture, The Supremacy of Motherhood, Marriage and Maternalism.

Part 2.—The Practice of Eugenics: Negative Eugenics, Selection Through Marriage. The Racial Poisons: Alcohol, Lead, Narcotics, Syphilis. National Eugenics: Race Culture on Decadence, The Promise of Race Culture.

The author has closed the book with a very helpful appendix giving a list of other books that have been published upon this and related subjects and a brief review of each book by which you may know whether you wish to purchase that book or not. We recommend this practice to authors in general as being most helpful to the readers.

* * *

The Hippocratic Oath vs. Venereal Disease: The Charlotte Medical Journal in discussing editorially the Hippocratic Oath vs. Venereal Disease says in part: Supposing your daughter, whom you knew to be a well, refined and pure young woman, was about to be married to some young man to all intents perfectly healthy. Supposing this man, however, to be afflicted with one or another of the venereal diseases which to you he had denied having when you, a physician, had casually hinted something about them to him. Supposing that his physician was your most intimate friend and a friend of the family, and perhaps had been in attendance on your wife when this young lady about to be married was born, and had been more or less interested in her ever since. Must this brother physician and family friend stand by silently and allow your daughter to be sacrificed to the "Devil of Immorality"? Must he stand by silently and allow your daughter to be contaminated upon what is supposed to be the happiest day in a woman's life, her wedding day, with a vile disease that is destined to rob her of good health, her happiness and of that prerogative of motherhood—child-bearing? Must he stand by silently and allow your daughter, whom perhaps he loves also as a daughter, to be contaminated with a vile disease that may bring

her to the operating table on which she may yield up the breath of life, or, surviving the operative ordeal, leave the table de-sexed for all practical purposes? Must he stand by silently and allow all these crimes mentioned and many more to be committed against your daughter, making himself thereby a virtual accomplice in the committing of them, as by his silence he makes them possible? Yes, he must, because he is also the physician of the young man in question and the Hippocratic oath compels him, under pain of violating his most sacred word of honor, to remain silent. Should he violate this oath and speak to protect this daughter of yours the law makes him liable to heavy damages. At present, to live up to the oath and the law, he can only go to the young man who would contemplate such a crime and explain to him the awful results, appealing to his sense of honor and manhood to listen to him. Yet if, despite all the physician said to him, the young man insisted on going ahead and getting married, he would have to stand by and remain silent while the daughter of a brother practitioner and friend went to her destruction. Does this picture seem to you a little strongly drawn? It's not overdrawn, however, for it is a true statement of facts of what would happen in such an instance. It is what is happening every day when men afflicted with venereal diseases are marrying despite the protests of their physicians, who have to remain silent when they would like to seek out the intended unfortunate brides and warn them against these despicable monsters. Has the time not arrived when physicians should be legally released from their obligations in this regard when silence means disaster to some other innocent party? Is it fair to the physician that he should be made an unwilling but still virtually an accomplice to the impending crime? Secrecy in medical matters is necessary in many things, but should the innocent be allowed or rather made to suffer so that the guilty might be shielded? No, it is not just that such should be the case, and the Hippocratic oath should not be allowed to keep the physician silent when the venereally infected seek to spread the vile disease, and especially when they choose the good and pure for the contamination. Either this should be so or physician's certificates of freedom from venereal diseases should be required of all applicants desiring to marry.

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Sanitation and Health: By Lieutenant-General Sir Reginald Clare Hart, V.C., K.C.B., K.C.V.O., R.E., London. William Clowes & Sons, Limited, 1910.

The eleventh edition of a little book, entitled "Sanitation and Health," by Lieutenant-General Sir Reginald Clare Hart, V.C., K.C.B., K.C.V.O., R.E., is written in simple language, and points out how illnesses may be prevented by a little thought and attention on the part of individuals. It shows that many diseases are due to putrefaction produced by microbes, and how easily they may be prevented by the exercise of a little care. The best way of dealing with various kinds of poisoning is described, and the proper first aid to render in cases of loss of consciousness. Stress is laid on the importance of efficient ventilation and the duty of seeing that sanitary arrangements are up to date; and several pages are devoted to simple methods of determining the wholesomeness of the more important foods.

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Causes of Dysentery: Dr. C. J. Fagan, secretary of the British Columbia Board of Health, recently presented the following interim report of investigations conducted by him into the causes of the pre-

vailing serious epidemic of dysentery in north-west cities:

"The ages of the affected vary from infancy to 75 years, being as per reports from ten practitioners, 22, 2 years and under; 42, from 2 to 15 years; 37, from 15 to 40; 8, from 40 upwards. The disease is not restricted to any particular place. Such a number of adults being attacked is unquestionably unusual, and shows that the causes of the trouble are of more virulent character than generally to be found in conditions causing infant diarrhoea.

"Epidemic diarrhoea is something that has given sanitarians great concern for many years, and its cause has been discussed in many places. One point is universally agreed upon: that climatic conditions always are present when these attacks prevail. Lengthened drought in hot seasons is now accepted as being almost certain to be followed by epidemics. The cause of this is clear. The earth becomes heated, and the temperature of the ground, extending down sometimes to a foot or a foot and a half, shows a warmth of from 55 to 57 F. Such conditions are most favorable to the development of bacteria, and when the surroundings are filthy, certain bacteria are developed that are undoubtedly irritants to the intestinal canal if admitted to it.

"Here, then, we have myriads of bacteria develop, of various kinds, depending on the surroundings. These are gathered from the surface, and carried by the feet, by the blowing of dust, and by flies, around and into the houses. As said above, many kinds of these bacteria develop through fermentation and decomposition of foodstuffs. These foods when ingested cause irritation, and diarrhoea follows, depending in intensity upon the amount of decomposition and the character of the bacterial poisoning. Certain constitutions are able to resist, whereas others are more liable to the attacks. From conditions that I personally have observed, and from what has been reported to me by members of the medical profession, I am satisfied that much of the present trouble could be avoided.

"The bacteria developed from decomposing dead organic matter are most hostile to the human frame. Here, then, is a matter of simple common sense, and the observance of ordinary cleanliness will prevent much of the misery that exists to-day. My view of the present conditions is that the trouble comes from various sources: Foods during the summer months are particularly liable to this decomposition; as a result of this decomposition ptomaines are formed, and as above stated, when admitted to the stomach will cause irritation and consequent diarrhoea. Another cause is milk. This article is a splendid means for the development of bacteria, and provided the heat is sufficient the development of germs in milk will be enormous. The remedy is plain: Keep the milk covered and so protect it from flies and dust. Keep it cool and so prevent multiplication of bacteria. Again water, unless of the purest, is liable to multiply its germs, and so become an unhealthful drink. In my opinion all these conditions have contributed to the present epidemic, and the main cause is the enormous number of bacteria developed in the soil and made malignant by the presence of filth.

"It is evident, if the above conclusions are correct, that in the prevention of this summer disease, certain precautions can effect a great deal. Attention to the following hints would save many infants' lives:

"1.—Do not wean your infants during the months of July, August and September. To begin artificial feeding during the hot weather is very dangerous.

"2.—All milk should be pasteurized or even boiled before being given to the infant. Milk and water, and still more, patent foods, if left two or three hours, go bad, and are then very highly dangerous to the infant.

"3.—All jugs or other vessels for keeping milk must be scalded and kept absolutely clean.

"4.—The feeding bottle should be thoroughly scalded after each meal.

"5.—The use of 'comforts' is unhealthful, and when they fall on the floor they are dangerous and frequently the cause of diarrhoea.

"A few general points for the benefit of all:

"1.—Decomposing refuse, such as decaying vegetables, bones, fish heads, etc., is a fertile source of diarrhoea. It should be burned—not put in the dust-bin.

"2.—Scrupulous cleanliness of the house—especially of all rooms where food is stored—is most important. Dust in every form is dangerous to health, and for removing it wet cleaning is preferable to dry. Thus washing and scrubbing are safer means of cleaning floors, etc., than sweeping.

"3.—All food should be kept in clean, dry places, and be kept covered, so as to protect from flies and dust.

"4.—Milk should be kept on ice if possible, and absolutely protected from flies and dust.

"5.—When sewage systems are not available, dry earth or ash closets should be used, with coverings to prevent flies from being present.

"6.—When in doubt as to conditions of water supply, boil all water used for drinking or vessel cleaning."

Mosquito Traps: According to L'Hygiene Generale et Appliquee, a French officer in Africa observed mosquitoes issuing at sunset from crab-holes in the ground, and from that fact conceived the idea of constructing artificial holes of a similar nature to trap the insects. The mouth of the hole, an inch in diameter and rectangular in shape, leads into channels some 18 inches deep, forming an acute angle with the surface. The mouth of the hole is so disposed as to be sheltered from the wind and sun. These traps were found to be highly successful, and it is suggested that wooden imitations might prove useful for indoor use.

* * *

Culture of Lepra Bacilli. Leprosy, the unconquered scourge of the ages, is making what is believed to be its last stand against science. From Molokai, the coral island prison for the plague-stricken in the Hawaiian group, a few words have been flashed half-way around the world to Washington, telling of an achievement accounted second only to the discovery of the lepra bacillus by Hansen in 1879.

Three surgeons of the United States Public Health and Marine Hospital Service, after months of unremitting toil, have grown lepra bacilli in pure culture outside the human body, and in tiny thin glass tubes in the laboratory the loathsome germs are now growing in their third generation.

This achievement of the scientists seems to be the first step in a production of a vaccine of a serum for the cure or prevention of leprosy.

Open Mail

To the Editor of the Public Health Journal of Canada:

Untrained Nurses.

Dear Sir,—At the present time there is a great deal being said about "infant mortality, child hygiene," etc. Don't you think it would be well to investigate the credentials of some of the persons who are giving instructions to mothers? I have done district nursing for five years. I often meet people who are instructing mothers. Asked whether they are graduates and registered nurses, they reply: "No, but I can tell a woman how to care for a baby."

In my opinion no nurse should be allowed to do work among the poor unless she has a diploma and is also registered. It is not fair to the public nor to the nurses who work for years to get their diplomas.

REGISTERED NURSE.

Garbage in Paper.

Dear Sir,—Funny Toronto! While it is chasing the elusive fly, carrier of disease, it permits uncovered garbage wagons to meander unmolested about populous residence districts, poluting the air and offering a refuge to the pests that have escaped the swatters. On several occasions I have noticed such a conveyance in the vicinity of my own home. While the open wagon stood in the street the one man in charge would go to the side of a house and return with a full bucket, uncovered, of refuse food scraps to add to his load. I hate to kick, but isn't there a better way?

In Minneapolis—a clean, sanitary, healthful town—garbage must be wrapped in papers, small packages, easy and convenient to handle. For instance, as potatoes are peeled the peelings are wrapped in newspapers and thrown in the garbage can; and the same is done with table scraps. Then the garbage collector comes with his covered wagon, the can is emptied and returned, disinfectant is used both in the can and the wagon—and behold a clean, odorless, self-respecting community!

SANITARY.

A Dirty Lunch Room.

Dear Sir,—As I am a subscriber to your valuable journal, I wish to state that I visited a prominent lunch room of the "best class" on Yonge St., Toronto, the other day and was disgusted to find the whole place simply crawling with flies. Although the food was apparently excellent I was unable to consume anything beyond the soup and coffee; the fish supplied me was garnished with a dead fly. I think such a condition of affairs a disgrace to the city, demanding the attention of health officials.

CLEAN FOOD.

Unclean Mouths.

Dear Sir,—In a very excellent article in the July number of The Public Health Journal of Canada, by Dr. Chas. J. C. O. Hastings, Toronto, on "The Food value of Milk," appears this paragraph: "It has taken years to educate the medical profession and the public to the fact that all disease is due to the presence of germs that have gained access to our lungs or been taken into our stomach in food or drink. However, since this fact has been established every precaution has been taken by both physician and surgeon by means of rigid cleanliness and

antiseptics in all surgical procedures and by careful isolation of patients and disinfecting of all excreta, etc., in medical cases."

The dentist would like to know how many years it is going to take to get the medical profession to appreciate the fact that the disease germs of which Dr. Hastings speaks pass through the mouth and nose before they reach the lungs or stomach and that these cavities are cultivating beds of the germs he fears. While it is true that no food should be supplied to the public which might be a source of danger to health, it is equally true that all sources of danger by contamination after it reaches the public and before it reaches the stomach should be guarded against. Is it not a waste of energy and thought to secure pure milk and then mix it up with millions of germs from the mouth just before it enters the stomach? Many physicians can talk knowingly and wisely about the micro organisms of the mouth but how many of them even vaguely appreciate the significance of the square inches of tooth surfaces and folds of mucuous membrane covered with milk and food stuffs at body temperature and abundance of moisture for hours without disturbance. How many appreciate the fact that with the first morsal of food at each meal all the germs easily dislodged are carried to the stomach. How many know and teach that all those living upon a liquid diet and especially sick people should clean their mouths before as well as after taking food. Dr. Hastings says that a teaspoonful of milk which contains 3,000 germs will contain 10,000,000 in 24 hours if kept at room temperature. This granted, what will happen in the mouth of the very sick, semi-conscious or comatose patient who is fed pure milk (over which so much effort was spent) every three hours and the mouth not cleaned. Is it not clear that a very important part of the treatment of this patient would be neglected. It may be said that the nurse is expected to cleanse the patient's mouth. Who teaches the nurse how to do it? Such knowledge does not come by instinct. The fact is, the average physician takes no more care of the mouth than the average patient, and few appreciate the relation of the condition of the mouth to all of the acute infectious diseases, and to many chronic diseases.

In a recent address before the Royal Society of Medicine, R. Archerley reported that out of 1,000 cases of chronic diseases among the better classes 420 have defective and septic mouths; 798 did not or could not masticate their food. He says that the conditions upon which these figures were based were obvious and that a careful examination such as a dentist would make would doubtless have revealed many others.

Pure food was not all that these 798 out of 1,000 chronic cases required nor would "a pure milk diet and medicine" be all that the 420 required. I do not wish to decry the effort to get pure food, but I wish to point out a source of contamination of food and its consequences which is not fully appreciated by the medical profession.

D.D.S.

Meetings and Reports

Conservation Commission Conference.

Hon. Clifford Sifton, Chairman of the Conservation Commission, has arranged for a Dominion conference in Ottawa on October 12th, to discuss various questions looking to the conservation of public health, such as the general betterment of sanitary laws, the establishment of a National Bureau of Health, etc. Invitations have been sent to the Prime Ministers of each Province to send representatives of the Provincial Health Departments to the conference. The members of the Public Health Committee of the Commission, viz., Mr. E. B. Osler, M.P.; Dr. H. S. Beland, M.P.; Hon. J. A. Calder, Hon. Sydney Fisher, Sir Sandford Fleming and Dr. Cecil C. Jones will be present.

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Canadian Public Health Association.

A meeting in the interests of the Canadian Public Health Association will take place in Ottawa on the 12th of this month in conjunction with a sitting of the Conservation Commission of Canada.

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Royal Sanitary Institute.

The twenty-fifth annual congress of the Royal Sanitary Institute, whose objects are to promote the advancement of sanitary science and to disseminate knowledge relating thereto, was held last month at Brighton, England, where conferences had previously been held in 1881 and 1890.

In his inaugural address the President, Sir John A. Cockburn, reviewed the growth of sanitary science during the past year. This growth, he said, had exercised a beneficial influence on the health of the nation. The work had spread to Australia, Canada, South Africa, and other parts of British Dominions. Nothing important affecting public health escaped the attention of the Institute, which had become a conning tower from which the battle of science was directed against disease. The prevention and treatment of disease became a matter of common concern. The growth of a corporate consciousness might be accepted as one of the signs of a synthetic age. Cleanliness, fresh, air, pure food, and prevention of infection were the key notes of modern medicine. In every city ample provision for baths should be made available for the masses, but dirt in the skin was of little consequence compared with the importance of the air which people breathed and which invigorated or polluted the whole body. Great improvement had been manifested of recent years in the matter of ventilation in public buildings, private houses, and railway trains. The fear of what was called catching cold should be exploded. What was called a cold in the head was an infectious disease, and was caught nowhere so readily as in close compartments, while fresh air was an actual preventive. The ventilation of railway carriages needed improvement. With reference to the improved supply of food it was easier now to obtain good butter and milk in London than in any part of the country. In preventive measures a great change had taken place for good, and public opinion had been beneficially educated on such matters as cleanliness in streets and trains.

In the crusade against consumption it

would be well if owners of dogs were further educated in this matter of public cleanliness. He was pleased to know that so much was being done by sanitary authorities, backed by public opinion, in the crusade against this terrible scourge, which must be faced and dealt with at all cost. The President urged the compulsory use of clean razors, combs, brushes, and towels in all barbers' shops, and expressed the opinion that the offensive habit of blowing down the neck to remove short hairs should be punishable. It should also be an offence for a grocer to blow open a bag in which eatables were to be placed, or to moisten his fingers with saliva in separating papers for that purpose. Good causes are never without allies, said the President in conclusion. A favorable environment for the work of the Institute was provided by garden cities, town planning, and better housing of the masses. The new science of eugenics was a strong reinforcement. Some discussion had recently taken place as to the relation between alcoholism and physical deterioration, and doubt had been cast on their connection, but until indisputable proof was forthcoming it would be wiser and safer to keep to the path of previously accepted opinion. It was well to beware of premature generalizations. Much yet remained to be done towards securing compulsory notification of disease and in making provision for sickness and maternity insurance. It was gratifying to see that in that congress there was a Conference of Women on Hygiene under the presidency of the Countess of Chichester. When women took up a question they meant business, and victory was never far off. One of the signs of the times might be read in the Women's Imperial Health Mission which was caravanning England. It was to be hoped we should soon see the last of the swaddling clothes which cramped the infant limbs, and of the rubber teat, whose constant suction deformed the tender tissues of the gums and palate, and upset digestion. Perhaps mothers eager for the ill omens of precocity would begin to realize the iniquity of attempting to teach very young children to write. Such fine movements of the muscles of the hand and eye made prematurely were a fertile cause of squinting and disordered muscular action. Coincident with the advance of interest in public health, there had been a corresponding improvement in the status of the medical man. The medical officer of health was now invested with large administrative powers and quasi-magisterial functions and might be said to have become a high priest of our salvation.

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The American Public Health Association.

At the recent meeting of the American Public Health Association at Milwaukee, Wis., Dr. Simpson of Winnipeg was elected president. The only other Canadian who ever before occupied that office was Dr. Montizambert, Director-General of the Public Health Department at Ottawa. Dr. A. J. Douglas, also of Winnipeg, and City Health Officer, was elected chairman of the section which deals purely with duties of municipal officers.

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Union of Municipalities.

Influences that make for the betterment of the human race and the responsibilities of municipalities for the improvement and beautification of cities and towns was the subject of a splendid address by Mr. Henry Vivian, M.P. for Birkenhead, Eng., at the convention of the Union of Canadian Municipalities last month in Toronto. Mr. Vivian was a member of the Select Committee of the British

House of Commons appointed in 1906 to investigate the housing problem of the working classes and the methods that should be adopted to improve the homes of the toilers. He said there was no single aspect of life that had more mighty influences on the health, lives and character of the people than clean, healthy homes. England had learned that lesson from the startling facts revealed during the investigation made by the Select Committee of which he was a member.

In Liverpool, visits were made to many hundreds of homes; children were examined at the public schools and followed to their homes. They were divided into three classes: the children of fairly well-to-do citizens; those of the less fortunate; the children of the dock laborer and others whose employment was of a precarious character. After that examination had been made, a visit was made to Port Sunlight, one of the ideal home towns that had been started by the foresight and generosity of a wealthy merchant. It was found that children of the average age of 14 years were five inches taller and 30 pounds heavier than children of similar ages in Liverpool, although that city was only four miles away. In the one place they had health and sunshine, in the other squalor and filth. In Edinburgh and Birmingham similar conditions were discovered. These facts showed that an entirely different type of human being was developed in the slums of the cities than in the pure atmosphere of the model village.

Arguing on the physical fact, he came to the conclusion that if there was so great a disparagement between the two classes of children physically, their moral and mental capacities must be equally different. Not content with these remarkable facts, they pursued the investigation further. In London, Birmingham, Sheffield, Manchester and other large centres, they found the same conditions prevailing. In London they discovered that the death rate in the one-roomed homes was 40 per 1,000, in the two-roomed homes 20, in the four-roomed homes it was eight or less. They determined to reduce this awful slaughter of the innocents, as they knew that if England was to hold her own something had to be done to stop this wholesale demoralization of the people. When the startling facts became known, a real national movement sprang up in all the cities and towns to deal with the problem. Legislation was enacted giving municipalities power to provide better homes. A campaign was waged against the slums—filth and vice.

"I am glad to tell you," he said, "great results, beneficial results have followed that campaign. Model cities have been started in many centres. The people go to see them, they become disgusted with their dirty homes and clamor for the new ones. The result is a great uplifting of the masses. Don't think for one moment we segregate them. The arrogant wealthy cannot be kept apart from the sullen, sulky workers. Sunshine and cleanliness have to be instilled into the lives of both. Healthy recreation grounds have been provided; the poor children are brought from the streets and gutters and allowed to play in the same grounds as the children of the more favored classes. We keep on asking the question: 'Is the human factor in civilized society of less value than the sheep, ox or horse in the agricultural society?' The scientific farmer takes great care of his cattle. He knows the vital importance of it. We are making the municipalities realize that it is their duty to take the same care of the children of the toiler. Here in Canada you must take great care that you do not get the slum and tenement areas in your big cities. You have lots of

room; plan your cities so that you have plenty of room; give the people lots of fresh air and sunshine, and you will have a hardy, virile race. Take a long view of things. Get power to make plans for the extension of your towns and cities and do not let selfish interests for the sake of immediate gain crowd you up so you cannot expand. Otherwise you will get the same conditions here as prevail in New York, Chicago and London."

* * *

The Sanitary Assurance Association.

The 29th annual meeting of the Sanitary Assurance Association was held recently, when the annual report was adopted and Mr. Walter Butler, M. Inst. C.E., re-elected President. The report states that the advance made by science generally during the past half-century has been nowhere more thorough and manifest than in the domain of sanitation and hygiene. It is not easy to exaggerate the deplorable state of things that existed even 29 years ago, when the Sanitary Association was founded. Some of the arrangements then accepted were so far removed from what obtains to-day—even where the highest standard is not attainable—that it is hard to credit some of the early reports on property surveyed by the association. It is not too much to say that the association has been largely instrumental in raising the standard of sanitation to that which fortunately to so great an extent now holds good in all classes of buildings. At the time the association was founded hardly any standard was recognized, and the most primitive methods of sanitation were too often thought adequate. That there was then urgent need for reform in the matters most intimately affecting the amenities of home life and the health of the individual was very evident. Even with all the advance that has been or will be made, constant vigilance will always be necessary for the maintenance of health, and the association will continue to enforce the fundamental principles it was founded to maintain, and urge upon everyone the importance of sanitary efficiency, whether in the home or in the buildings only occupied during working hours. The association has accepted an invitation to be represented at the International Congress of Social Insurances to be held at The Hague in September next.

* * *

International Hygiene Exposition.

The German Government and that of the kingdom of Saxony are anxious to have Canada represented in the International Hygiene Exposition to be held in Dresden from May to October, 1911. Dr. Emil A. Linger, the commissioner of the exposition, has extended to the Government an invitation to participate, and also has asked the Public Health Association to organize a national committee to see that Canada is properly represented. The exposition will be held in the Royal Gardens at Dresden.

Postscript

Royal Sanitary Institute.

His Majesty King George has consented to become patron of the Royal sanitary Institute. The Institute was founded in 1876, and is carrying on a large work in teaching and examining in hygiene and sanitary science, both in the United Kingdom and in other parts of the Empire. It maintains in London a permanent Museum of Sanitary Appliances, open free to the public. Its members and associates number nearly 4,000.

"Sanorto."

A flooring of great interest to medical men and sanitarians generally, particularly for hospitals and operating rooms, etc., is "Sanorto," manufactured by the Sanitary Floor Company of Toronto, 544-546 King St. west. It is manufactured of seven different kinds of materials, which are imported from Germany, and is passed through different processes which leaves it in a plastic state, something like mortar. Any coloring out of forty-eight different kinds which may be desired is mixed with the material or paste and can be laid in panels or squares of different colors and handsome designs, lettering, etc., can be executed. A one-half inch coat of the paste is laid on expanded metal or directly on cement and is worked to a smooth even surface, which leaves it when finished one solid piece without a crack, even the floor and the wainscotting being joined by a little curve, making the floor wainscotting and dadoe cap all one piece, which makes it a perfectly sanitary floor and preventing moisture going in between the floor and wainscotting to rot the woodwork below. It is also a preventative in regard to fire. "Sanorto" flooring is a trifle heavier than hardwood but not as heavy as tiling and is also a foot-warm flooring, easily cleaned and sanitary to the highest degree. "Sanorto" is one of the best floorings manufactured to-day as regards durability, cleanliness and price. The latter on account of all the materials being imported from Germany and considering the length of wear. It is a most desirable flooring for any place where durability and cleanliness is desired.

A few of the places where "Sanorto" flooring has been laid are the new Grand Trunk Station at Waterloo, Heintzman & Co., Toronto General Hospital, Guelph, Trennex Hotel, Niagara Falls, Ont., and Drs. Anderson, Trow, and Goldsmith of Toronto.

Healthgrams.

Hygiene is humanity's hope.

Tight lacing is a narrow practice.

Too much air is just enough.

First aid to the dyspeptic—a good laugh.

The proper appreciation of health will delay its depreciation.

Your worst enemy—the common fly, the typhoid fly. Swat him.

Smallpox is a disgrace—save your reputation and your face by vaccination.

While mothers are working in factories infants may be wasting in the homes.

Laughter is the sunshine of existence; flood yourself with it; let it overflow to others.

Seats for women employes and opportunity to use them would leave many hospital beds vacant.

Milk Points.

Don't keep milk where it will be warmer than 50 degrees.

Don't leave it in an open dish or pan.

Don't put it in the bottom of the refrigerator.

Don't forget to sterilize every bottle.

The Electric-Weld.

The Combination Boiler is in all respects a plumbing fixture—substantial in construction—easy to install—has no delicate parts to get out of order, and will give continued efficiency through a longer period than is possible with other forms.

The "Electric-Weld" Combination Boiler puts at the service of the architect or the builder and plumber, the best range boiler on the market, combined with the most efficient gas water heater at just about the price of any reputable range boiler plus that of the least inefficient independent heater.

A. Welch and Son, of 304 Queen St. West, Toronto, are the Canadian distributors.

A Fine Sanitary Measure.

Eminent medical authorities declare that as a sanitary measure the oiling of roads is invaluable in preventing the spread of disease germs, carried by dust, which produce eye, throat, and tubercular troubles of every nature. The horse, whose delicate organisms are not protected by nature from the irritating inhalation of dust, receives his full measure of relief and protection.

It also removes the disagreeable glare of the white, dusty road, which is so trying upon the eyes and nerves of the suffering traveling public, and saves curtains, upholstery, and other furnishings from damage by dust, and makes residence upon a treated road a luxury. Merchants doing business upon dusty macadamized streets lose, by reason of damage to their stocks, hundreds of dollars annually, which would be saved by the use of oil.

The oil treatment absolutely protects the body of the road from the destructive effects of automobile traffic, provides a surface upon which the wheels will not skid, lengthens the life of rubber tires by preventing contact with the sharp particles of the road binder, and dispenses with the use of chain tires, which are a menace to the life of the roadway, thereby resulting in saving at least 50 per cent. of the cost of maintenance.

In an excellent article on Road Oils, Dr. Charles Sheard, late Medical Health Officer of Toronto, states that "The oil obtained from the British American Oil Co., Limited, is the preferable oil." The reason for this is simply that all their crude oil, which is imported, has a heavy asphalt base, making it particularly valuable when manufactured into road oil products.

Some Hints.

Our one first duty—keep well.

It is easier to retain than to regain health.

Good food, good drink, and good air for good thinking and good working.

Bathe the body daily—an active and clean skin relieves the lungs and kidneys of much work.

Personal cleanliness is more than a fad or a luxury—it means health and life.

Cleanliness costs little—sickness costs much.

Build your reputation for civic pride in your back yard.

We spend millions for tobacco—have we "money to burn?"

Mike a Logician.

Bridget had been going out a great deal, and her husband, Mike, was displeased. "Bridget, where do ye spend yer toime nights? Ye're out iv'ry avenin' fur two weeks," he said.

"Shut up, Mike; I'm gettin' an edication," she answered.

"An' phwat are ye learnin'?" said her indignant husband.

"Why, to-night we learned about the laws of compensation."

"Compensation?" said Michael. "What's that?"

"Why, I can't explain, but, fur instance, if the sense of smell is poor, the sense of taste is all the sharper, and if yez is blind ye can hear all the better."

"Ah, yes," said Mike thoughtfully. "I see, it's loike this: Fur instance, if a man is born wid wan leg shorter than the other, the other is longer."

Luck.

Cook—Taylor was always a fortunate man, but doesn't it seem wonderful that his luck should stay with him to the very last?

Raleigh—How was that?

Cook—He was operated on for the removal of a pearl which he had accidentally swallowed while eating oysters, and when the pearl was examined it was found to be valuable enough to pay for both the operation and the funeral.

Clean Barbers.

A clean towel and wash rag for each patron, the elimination of the sponge, and the enactment of laws to bring about these reforms were among the demands made at the recent convention of the National League of Barbers in Pittsburg. Delegates numbering over 200 were in attendance.

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Should be used in all cases of skin disease, infected conditions of the genito urinary organs, inflammation of the bladder, eczema, abscesses, burns, etc.
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FARWELL & RHINES, Watertown, N.Y., U.S.A.

More Hints.

Don't buy food from a dirty place. If the flies beat you to it, let them have it.

Screen your windows and doors until the first frost. Protect all food supplies from flies and insects. Shun the man who tries to sell you unscreened food. If he will not protect you and your baby you must do so.

Flies produce typhoid and tuberculosis, and uncleanliness produces flies.

Like the Model.

A story is told of a beautiful statue that once stood in the market place of an Italian city. It was the statue of a Greek slave girl, and represented her as being beautiful, tidy, and well-dressed. A ragged, uncouth, forlorn street child came across the statue one day in her play. She stopped and admired it. Something in the pure white marble face seemed to touch her. She went home and washed her face and combed her hair. Next day she came before the statue again and gazed at it long and lovingly as before. It had an inspiration for her again, and she went home and washed and mended her tattered clothes. The statue came to be a favorite place of resort for her, and each time that she gazed on its sculptured loveliness she had a glimpse of a more beautiful life, until she became a transformed child.

The "Take" Sign.

In an interesting article explaining the origin of everyday signs, T. P.'s Weekly remarks that "in prescriptions an "R" with a stroke through the leg always comes first. The 'R' stands for the Latin word 'recipe,' which simply means 'take.'" A large and growing class of people think that the time has come for less mystery in the matter of prescriptions. Everybody knows that when a

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physician writes out a prescription he means it to be taken, and taken blindly, too, for prescriptions are so written as to give the minimum amount of information to the patient. The indiscriminate dosing of sick ones with drugs is becoming less and less popular in the medical profession, but doctors still cling to the foolish traditions which favor mystery in medicine and forbid practitioners to pay for publicity.

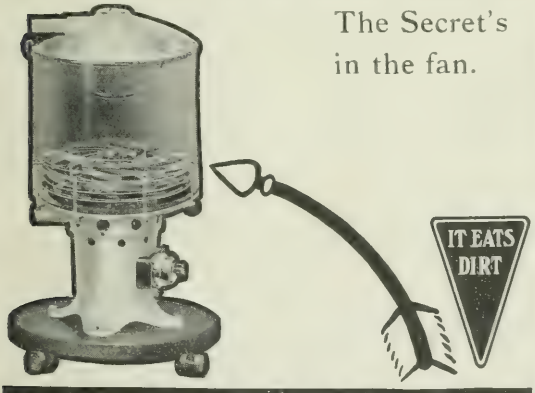
The Sewage and the Streams.

Civilization has not, as yet, mastered the problem of the proper disposal of sewage.

Or, if it has, we are little more than half civilized in this country.

Sewage must be disposed of. This is evident, even to the barbarian, who hasn't the faintest conception of the relations between sewage and health.

It is doubly patent to the man who un-



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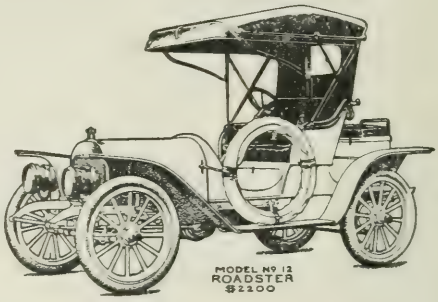

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derstands the disease and death which lurks in every particle of waste and offal.

The ideal method, the one which civilization will discuss and adopt some time, diverts the sewage back to earth, whence it comes. It does this in such wise as to prevent its disease germs from fastening on the human system.

This method is, alas, but an ideal—at least with us.

We have sewers, but they discharge their contents into the streams, the lakes or the oceans.

We have "disposal plants" of various sorts, but an "effluent" results from each to menace public health. If the solid residue is treated, it becomes practical waste.

Everywhere in the more densely populated territory there is a struggle for pure water—water uncontaminated by the sewage of the cities.

Whatever our ignorance of what to do with sewage, it is clear as daylight that it should under no circumstances or conditions be admitted to streams that are sources of drinking water supply or likely to be.

Water once polluted is not to be purified.

Its harmful disease germs may be killed by chemical treatment, but their filth remains.

Filtration beds and devices of similar nature may and probably do measurably protect the public health, but they do not entirely remove pollution from the water.

These facts are well nigh self-evident. So, too, is their logic, which imperatively forbids that sewage in any form or however treated should be permitted to flow into potable waters.

Pure water is pure water. Purified water may or may not be all right, but it is not pure water.

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	Arsenical solution	= 2 mins.
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No. 56	Blaud	= 5 grs.
	Ext. Aloes	= 1 gr.
	Ext. Nux Vomita	= ¼ gr.
No. 57	Blaud	= 10 gr.
	Ext. Aloes	= 1 gr.
	Ext. Nux Vomita	= ¼ gr.
No. 58	Blaud	= 15 grs.
	Ext. Aloes	= 1 gr.
	Ext. Nux Vomita	= ¼ gr.

Blaud Arsenic and Nux Vomita

No. 59	Blaud	= 5 grs.
	Arsenical solution	= 1 min.
	Ext. Nux Vomita	= ¼ gr.
No. 60	Blaud	= 10 grs.
	Arsenical solution	= 2 mins.
	Ext. Nux Vomita	= ¼ gr.

Blaud Arsenic and Strychnine

S.E.C.		
No. 61	Blaud	= 5 grs.
	Arsenical solution	= 2 mins.
	Strychnine	= 1-50 gr.
No. 62	Blaud	= 10 grs.
	Arsenical solution	= 2 mins.
	Strychnine	= 1-50 gr.

Blaud Tonic Laxative

No. 65	Blaud	= 10 grs.
	Arsenical solution	= 2 mins.
	Ext. Nux Vomita	= ¼ gr.
	Phenolphthalein	= ½ gr.

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Internationale Archiv fur Offentliche.

The Hygiene Commission of the International Dental Federation, of which the president is Mr. W. B. Paterson, of London, comprises the national committees of twenty civilized countries. The need of an organ to make known the results of its investigations on matters relating to the hygiene of the mouth having made itself felt, the Internationale Archiv Fur Offentliche has been founded for the purpose. Contributions will be published in German, English or French It is edited by the president of the committee, Professor Ernest Jessen, of Strassburg; Dr. George Cunningham, of Cambridge; Professor William H. Potter, of Boston; Professor Carl Christensen, of Copenhagen; Mr. Albin Lenhardtson, of Stockholm; Dr. William Donnally, of Washington; Dr. A. Siffre, of Paris; and Mr. A. Steffen, of Cuxhaven. The Archiv, which is published at Stuttgart, will appear at irregular intervals.

Canadian Society of Sanitary and Heating Engineers.

Last month the National Convention of Plumbers declined to decide upon the adoption of a new name and the taking out of a new charter. The name suggested was the Canadian Society of Sanitary and Heating Engineers. The matter was left over for the consideration of the incoming executive. It was decided to hold the next annual convention in June at Port Arthur and Fort William.

Convention of U. S. Food and Dairy Men.

The Association of National Food and Dairy Departments of the United States Federal Government and various states will meet in annual convention in New Orleans during the week beginning Nov.

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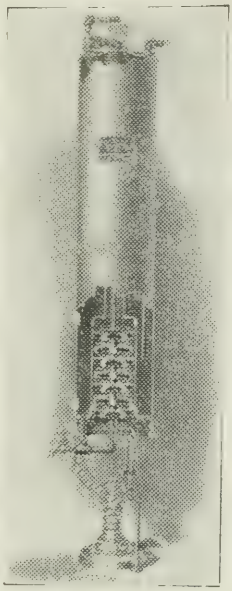

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2, and take action on some very important matters pertaining to the pure food and dairy laws of the United States and different health topics.

National Association of Master Bakers.

A paper on "The Relation of the Housewife to the Baker," written by Mrs. Amy C. Ransome of Washington, created a lively discussion at the session of the annual convention of the National Association of Master Bakers held in Baltimore recently.

The paper was a heart-to-heart talk on the methods of the bakers. The system of distributing bread was severely arraigned. Sending out unwrapped bread in the hands of a none too careful driver was condemned, and then the writer of the paper had some critical remarks to make about employes licking labels to stick on the bread.

The label-licking theory was promptly disposed of by the explanation that the labels are simply laid on the bread and just naturally stick when baked. Many of the bakers admitted that the delivery of bread was not as satisfactory as it should be.

Much space was devoted in Mrs. Ransome's paper to an analysis of an investigation made of the attitude of housewives to bakers' bread. Sixty were questioned and the majority favored home-made bread. This condition, it was admitted, was largely due to the pride of the housewife.

Ice Cream Standard Adopted.

The Illinois State Pure Food Commission has adopted a tentative standard for ice cream to be in force until a permanent standard has been formulated. It follows: "Ice cream is a frozen substance, produced, stored and sold under sanitary conditions, and made from clean milk

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products and sugar, with or without the addition of other wholesome food stuffs, of not more than eight-tenths of one per cent. of gelatin, gum tragacanth or other harmless vegetable gums and contains not less than 8 per cent. milk fat and not more than 5,000,000 bacteria per cubic centimeter of the melted article."

Healthgrams.

Don't worry—keep cool.

Drink buttermilk.

To feel hot—talk hot.

Why eat Arctic food in tropic weather?

"Go jump in the lake"—it's cooling and cleaning.

A day in the parks may save weeks in the hospital.

Let hot weather be the closed season for "the growler."

God gave us vegetables and fruits in the summer time for summer food. "Get wise."

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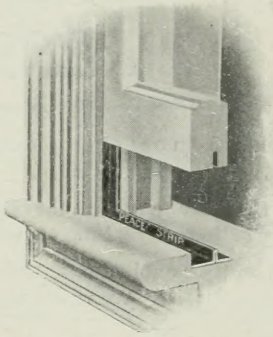

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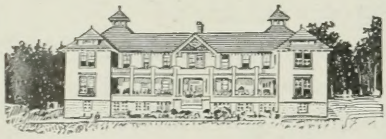

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